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ADDRESS.

THE PREDOMINANCE OF GERMAN INFLUENCE IN MODERN MEDICINE AND SURGERY.

Address of the Chairman of the Section on Ophthalmology at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7-10, 1898.

BY H. GIFFORD, M.D.

OMAHA.

That the Germans do take a disproportionately large part in the furtherance of medical science will not, I think, be questioned by those who have attempted to look up any medical subject thoroughly. In one ophthalmologic monograph, by an American, which I happen to have at hand, there are quoted forty-five papers by Germans (including Austro-Germans) as against forty-two from other nations, while in another, also by an American, but more strictly concerned in original research, of twenty-two authors quoted, twenty are Germans. I do not mean to say that such figures give a fair idea of the actual share in medical progress taken by non-German nations, for a large part of such progress is the result, not of original research, in the ordinary sense of the term, but of clinical acumen and inventive talent; qualities in which the French and English-speaking nations are certainly in no way inferior to the Germans. But when one examines the solid basis of facts upon which modern medicine rests, facts dug out of nature's storehouse by hard, patient work, the preponderance of German contributions is overwhelming. In looking for an explanation of this fact it can not be claimed that it is due to any marked superiority of the German intellect. In the roll call of the highest types of scientific ability, France and the English-speaking nations certainly do not suffer by comparison. The race which has produced Newton, Dalton, Darwin, Thompson and Edison certainly ranks second to none in intellectual vigor. And while not for a moment denying that Germany, too, has produced many first-class scientific minds, it is plain, I think, that the great bulk of work to which she owes her medical prominence is the work which the majority of well-educated, intelligent medical men in this, or any civilized country, could do if they would devote the necessary time and energy to it. In other words, it is work which they would do if they only had sufficient incentive.

Now, admitting that the Germans may have an special genius for painstaking, accurate, detail work, the difference in the amount of their output in medicine, as compared with England or this country, is certainly far greater than any race difference will account for. It can only be explained by the greater incentive furnished by the German environment; and of this environment the prime factor in the stimulation of scientific research is the plan pursued in the appointment of university professors. We are apt to think of the Germans as a nation of savants, but the rank and file of medical men in Germany do little if any more research work than is done by the average in this country. The great part is done by the younger professors or those who hope to become such. A considerable amount of first-class work is done by candidates for the doctor's degree; still more by the assistants; but most of all by the privat-docenten, young men who for the best years of their lives defer matrimony and financial advancement and devote their whole energy to original work, each one knowing that with good ability, if he is industrious and sincere, he is sure to be rewarded in time by a professorship or some other important position.[1] If the first position is in one of the smaller universities, the young professor, once installed, renews his work; knowing that only by so doing can he hope for a call to a larger field. Called from Giessen, Marburg or Erlangen to Breslau, Halle or Munich, some men find their ambition satisfied, relax their efforts and are but seldom heard from again, but a fair proportion, either from habit or love of the work, or in the hope that on the rare occasions of vacancies at Berlin or Vienna they will be the chosen ones, keep hard at work adding to the magnificent pile of German learning. Of the numbers who start in the race for academic preferment, many must fall behind, but all are encouraged, at the outset, by the knowledge that the work which they do, even if it fail to be rewarded with a professorship, will be the best passport to one of the numerous positions at the head of hospitals or in public health departments; these institutions acting thus as powerful auxiliaries of the universities in the work of inciting to original research.

The most important differences between Germany and America in the matter of medical appointments are the much higher standard of the Germans and the custom of their university faculties of filling vacancies from other institutions than their own. Much has recently been done in this country toward elevating the standard for admission to the medical profession, but until much more is done to raise the requirements for medical professorships, anything like an approach to Germany's scientific output is entirely out of the question. I think it is no exaggeration to say, leaving the smaller institutions out of the question, that in the best twenty of our medical schools more than one-half of the professors, taken in the aggregate, have *received* their positions for considerations which in Germany would hardly entitle them to the rank of privat-docent. To be sure, the best men, as a rule, get the best places to be had in the city in which they live; and while in many instances the men thus obtained are as good as could be

[1] This, of course, does not apply to some of the privat-docenten in the larger cities, who do little work, but retain their positions for the prestige which it gives with the laity.

obtained anywhere in the world, the fact remains that even in our larger medical centers, while the average of ability, is high, that of scientific achievement is not. This is partly because the appointments being made, in the great majority of cases, from the local profession, various influences, social, political and institutional, aside from the scientific attainments of the candidates, are bound to enter into the case. In the German university, on the contrary, a most important and distinctive feature is the general rule to call some one from another institution or town when a vacancy occurs. This not only allows a much more unbiased judgment of the merits of the men under consideration than is possible where the plan common in this country is followed, but also acts as a powerful incentive to original work throughout the entire country.

It may be questioned whether the German system could be made to work in this country without a decided change in the ideals of a large part of our medical men. Whether, for instance, a man who had built up a lucrative practice in one of the smaller cities would feel tempted to give up his position and go to a somewhat larger place at the other end of the country, with the prospect of repeating the removing process several times within ten or fifteen years, simply because these moves might be steps toward a permanent location in some great metropolis; or whether, even under the stimulus of such a reward, any large body of young men would spend many years in unremunerative original work; or if once in the way of doing such work, whether they would continue it amid the exacting vicissitudes of active practice.[2] In other branches of science there are no such difficulties; the zoölogist, for example, not only feels free to use upon original work whatever time and energy his routine work may leave him, but he does so in the conviction that he can in no other way so certainly advance both his spiritual and his material welfare. The result is that in zoölogy, physics, botany and astronomy America turns out a mass of work which compares favorably with that of any country in the world. The physician, on the other hand, however strongly inclined toward the purely scientific side of medicine, finds that its pursuit constantly clashes with the practical side. If he has a large practice he finds it hard or simply impossible to do more than keep up his reading and attend to his patients; while if it is small he is apt to think, perhaps rightly, that pulling various social and political strings will do more to increase it than anything he can do toward the advance of scientific medicine. Laboratory work not only is generally unremunerative and often, for immediate purposes, impractical, but it is entirely possible for an unworldly man who has a passion for it both to neglect his practice and to actually get behind the times as a practicing physician.

It may be said that in offering lucrative professorships and other valuable positions as rewards for original work we are not appealing to those highest motives which should animate the scientific mind, if the best work is to be done. This is true; the very best work is apt to be done only when a man of the highest intellect, energy and single-mindedness has the leisure and opportunity to seek the truth solely for the truth's sake or for the sake of his fellow-creatures; and of this most fortunate combination I know of no more shining example than the Anglo-Saxon, Charles Darwin. But what concerns us no[t] to find some means for getting a large amount of [u]ful work done by men who are entirely competent [to] do it, but who will not do it unless some more po[w]ful incentives than love of truth and man can brought into play. In Germany such an incentive the university system. I do not say that the s[a]plan can be made to work equally well here, simply that if it can not, so much the worse the future of American medicine.

It may seem that the foregoing lines lay too m[uch] stress on experimental and laboratory work as fac[tors] in medical progress, and to avoid this misconcep[tion] let me state that I fully appreciate the necessity o[f] other kinds of serious research. The man who years crowded with experience gives accurate keenly objective reports of his cataract operations the man who gives systematic thought to any of more abstruse problems of ophthalmology or works at the careful collection and sifting of the lit[er]ary and clinical testimony on any particular subj[ect] may be doing original work of a much higher more useful kind than he who spends the same ti[me] with his eye glued to the large end of a microsco[pe] I also appreciate the fact that the inventor of ophthalmoscope, or an intestinal button, or a new stitch, may do more for suffering humanity in a f[ew] moments than another who delves for a lifetime the laboratory. But such fortunate flashes of int[u]tion come rarely and do not alter the fact that t[he] only sure way for the average man to contribute medical progress is by the patient and systema[tic] search for new facts.

[2] Perhaps a still more doubtful question is, whether young men with a good start in some large city would accept calls to small towns with the readiness of the Germans.

ORIGINAL ARTICLES.

GLIOMA OF THE RETINA.

Presented to the Section on Ophthalmology at the Forty-ninth Ann[ual] Meeting of the American Medical Association, held at Denver, Colo., June 7-10, 1898.

BY J. L. THOMPSON, M. D.
INDIANAPOLIS.

In the eye section of the Ninth International Me[dic]al Congress, an eminent specialist of Paris said: "I have seen but four cases of glioma of the retina." This struck me as being a very small number, and led me to look over my records of the years 1871 to 18[93] inclusive. I shall, therefore, briefly report them as follows:

Case 1.—Girl, aged 1 year, was brought to my office Aug[ust] 29, 1893, with glioma of the right eye, which was described Vol. iv of Knapp's Archives of Ophthalmology, in 1874, t[he] clinical history by myself, the anatomic by Dr. Knapp. [As] the subsequent history was not published, I recently wrote the child's mother for data concerning other members of t[he] family who have since died of this disease. Her letter, wh[ich] I here produce, will explain the whole matter:

"At your request I will try to give you the desired inform[a]tion. First child affected with cancer of the eye was a b[oy] born Sept. 9, 1869. Disease noticed when born. No medi[cal] attendant. Died August 27, 1871. Second child, girl, bo[rn] August 23, 1872. Disease noticed in right eye June, 18[73]. The eye was removed by yourself, Sept. 2, 1873. Cancer ca[me] in the other eye about seven months later and she died Aug[ust] 11, 1875. Third child, boy, born October 29, 1880. Can[cer] discovered in the eye at the age of three months. Died Jan[u]ary 24, 1882. Fourth child, girl, born Sept. 8, 1883. Disea[se] noticed in right eye in February, 1885. Died March 5, 18[86]. Fifth child, girl, born Sept. 29, 1888. Disease noticed in ri[ght] eye February, 1890. Died July 5, 1891. I am fifty-five ye[ars] old, the mother of fourteen children—seven boys and se[ven] girls. I have always had good health. I have lost no ot[her]

ildren but the five who died of the cancer of the eyes. I not know my husband's people, but an old lady who did, d me that a greataunt died of cancer of the breast, and that e had three children who died of cancer of the eye. My last ree children's eyes did not get so large as the first two, but ey suffered with their stomachs. It was impossible to get y food to stay on their stomachs."

(Comments on these cases will be reserved for osing remarks.)

Case 2.—Girl, aged 4 years. Parents negro. Brought to me pril 28, 1874, with a gliomatous tumor, which entirely filled e right eye and so pressed upon the iris as to cause much in. The pupil was widely dilated. The eye was enucle- ed, simply for the purpose of relieving pain. Death three onths afterward.

Case 3.—Boy, aged 5 years. Parents German. No cancer- s history is found. Consulted me January 9, 1877. Glioma right eye. Vitreous chamber entirely filled with the growth. upil widely dilated (T+3). Child suffered greatly. Enucle- ion January 11, 1876. Death from brain trouble, July, 1876.

Case 4.—Boy, aged twenty months, was brought to me Sept. , 1878, for the purpose of having what the parents and their ysician supposed to be a cataract removed from the right e. But when I told them that it was a malignant tumor, hich should be treated only by removal of the eye-ball, they ent home. I learned afterward from a physician that the ild died of brain disease in the following year.

Case 5.—Girl, aged 4½ years. The parents consulted me ay 21, 1880. They had noticed the peculiar metallic reflex om the fundus of the right eye some months before. The owth entirely filled the eye-ball and pressed upon the iris. No terior chamber. Pupil widely dilated; pain great; enucle- ion May 25, 1880. Child died in the following December.

Case 6.—Boy, aged eight months. Glioma in both eyes. arents healthy; had noticed the growth in the left eye soon ter birth, but had only seen it in the right eye a few weeks fore they consulted me, on July 12, 1883. No operation. I arned that the eyes protruded from the orbits soon after they turned home, and that the child died of brain disease about n months after their visit.

Case 7.—Boy, aged 4 years, brought to my office July 5, 884, for the purpose of having an operation for cataract. The owth filled about half of the posterior portion of the eye. hen told that it was cancer, and that the eye should be moved, the parents objected, returned home, and, as I arned from their physician, the child died in convulsions nine onths afterward.

Case 8.—Boy, aged 2½ years. The parents, who consulted e, had noticed a peculiar shiny appearance in the eye several onths before they brought him, which was on February 9, 886, when the tumor filled about three-fourths of the vitreous hamber, and seemed to contain two lobes of unequal size. he pupil was a trifle larger than that of the other eye, but uite movable (Tn). Enucleation the following day. I saw he child two years afterward, and there was no sign of the isease in any other organ, and he is now in perfect health, welve years after the first consultation.

Case 9.—A fine-looking boy, aged 2 years, of very intelligent erman parents, who brought him to me on October 11, 1888. hey had noticed the bright reflection from the eye some onths previous to their visit. The pupil was but a trifle rger than that of the other eye. After dilating it, a well- arked lobated glioma was found. When the parents were ld that it was a cancer, they were terribly agitated, and they mediately commenced consulting all the prominent eye ecialists of neighboring cities. I removed the eye-ball on ov. 23, 1888. He had an artificial eye put in about ten months fterward, and I occasionally see him upon the streets in per- ct health, ten years after the enucleation.

Case 10.—Boy, aged 2 years, was brought for examination on ctober 11, 1890, with gliomatous tumor, which filled about wo thirds of the vitreous chamber of the right eye. The pupil as normal in every way. I advised the immediate removal of he globe; but the parents objected, went home, and did not eturn until eleven months afterward, when the tumor had erced the back part of the sclerotic coat, forcing the globe artly out of the orbit. My son enucleated the eye-ball simply o relieve pain. The child died six weeks afterward with brain ymptoms.

Case 11.—A beautiful girl, aged six months, with fine-look- g, healthy parents, who consulted me on December 26, 1896. he gliomatous growth filled a little more than half of the back art of the vitreous chamber of the right eye. The pupil was ightly dilated, but movable. It was a typical case of glioma- us tumor, with its well-marked lobes, as usually seen in such cases. When the parents were told that it was cancer, and I asked about the family history, I learned that the father's grandmother died of cancer of the uterus. The eye-ball was taken out on December 26, 1896. The child returned home on the fourth day, and is now perfectly well, eighteen months after the operation.

Case 12.—Boy, aged 2 years, was brought to me for consultation November 10, 1897, with well-marked gliomatous tumor, which filled three-fourths of the vitreous chamber of the right eye. Dr. Thomas of Logansport, an eye specialist, who sent the case for my opinion, enucleated the globe the next day. He wrote me a few days ago that the boy is now in the best of health, with no sign of a reappearance of the disease in any of the tissues. But as only six months have elapsed since the globe was removed, it is too soon to state the result.

Case 13.—Girl, aged 3 years. Her mother, who is a delicate looking woman, brought the child from an adjoining state, just as I was finishing this report, May 20, 1898, with a gliomatous tumor of the left eye. The parents first noticed it about one year before, but as their physician told them that it was a cataract, they put it off until it caused great pain, and made the eye to protrude. When first seen there was much inflammation of the conjunctiva, and three-fourths of the globe was prolapsed. The eye-ball was removed simply for the relief of pain. Of course the child will die.

REMARKS.

The first point which calls for inquiry is the large per cent. of cases met with in my practice. The gentleman referred to as having seen only four persons suffering from glioma of the retina is known to have then examined fifty thousand patients. My private records show a trifle over twenty-four thousand five hundred patients examined, and thirteen cases of this disease. (It is possible that I have overlooked one or more.) Add to the thirteen four cases reported by the mother of my first case, and we have seventeen cases of glioma.

Can climate, or soil, or temperament have anything to do with its causation? Two of my patients were of German parents, one negro. All the others were native born, as were their parents. All but one family had lived long in Indiana. The one out of the State resided in the adjoining State of Illinois, both of which contain very flat lands. In the seventeen cases, ten were found in boys, seven in girls. The right eye was affected in thirteen, the left in two, both in one case, and in one the eye affected was not mentioned.

In seven of these children the eye was not removed, and they all died within a year after they were examined. Ten eyes were removed, but in three of them it was too late to expect anything from the operation, except the relief of pain. Three of them are cured. Of the two others now living, one which had the eye removed six months ago has no symptom of the disease left; but it is too early to speak of a cure. The last one, which had the eye-ball removed but eleven days ago, will doubtless die.

It will be seen that three of these patients were supposed to be troubled with cataract by their attending physicians.

One question arises: Were the cases which recovered true gliomatous tumors? The answer is: They were, most undoubtedly. Indeed, I can not conceive of the possibility of a mistake being made by any practiced and careful observer. How could one fail to differentiate between a gliomatous tumor, with its anfractuosities and well-rounded convolutions, and any condition of the fundus of the eye which has resulted from inflammatory conditions?

Pseudo-glioma is a misnomer, and should have no place in ophthalmic literature. Not only were these cases examined macroscopically, but they were sent

to some of our most expert microscopists and pathologists. Dr. Weeks of New York and Dr. Wynn of Indianapolis pronounced them to be true cases of glioma.

In presenting these cases for your consideration, my chief aim is to emphasize the fact that glioma of the retina is not necessarily fatal, but that many cases have been, and can be, cured by early enucleation.

DISCUSSION.

Dr. C. M. HOLMES, Cincinnati—I have seen four cases of glioma, and unfortunately the first three were not operated upon in time, that is, they refused operation, although I believe the cases were seen early enough. I have one case that was operated upon about one year ago, and in which there has not been the slightest return so far, but statistics prove that even that is not sufficient time to warrant pronouncing a cure. The question as to whether there is such a thing as glioma, or whether these tumors should be classified with the sarcomata, is now under discussion by the microscopists. In the last case I had very careful microscopic sections were made, and it seemed to demonstrate the opinion of some expert pathologists that the glioma, as we call it, nearly always arises from the inner, granular layer of the retina. Hence there is now a desire to reclassify this tumor and put it with the sarcomata. It is not yet a settled fact, for recent German pathologists still classify it by the old name.

There is one thing certain: we must see our cases early, and we should insist upon operating or have nothing more to do with the case, and if we do this I believe we will get the consent to operate more frequently than we have done. I think one reason for the frequent refusal has been that we have not been firm enough.

Dr. FRANK ALLPORT, Chicago—I have seen two cases of glioma of the retina, and both were examined microscopically by Dr. Holden of New York. Both of these cases occurred in children, one a child about 3 years old, who was operated six years ago by enucleation. That child is well today and has had no signs of a recurrence. The glioma did not extend beyond the globe. The other case came to me three years ago, and when first seen the glioma had extended beyond the globe. The eyeball and tumor were removed and the child died of a recurrence of the disease one year ago. So one of my cases died and the other has not, though six years have elapsed without any apparent evidences of recurrence.

Dr. J. E. MINNEY, Topeka—I have seen four cases, of which two are living. One was seen in consultation with Dr. Longnecker some six years ago and was proved by pathologic examination to be that form of cancer. That little girl is living today.

The most interesting case I had was that of a little girl 12 years of age, in whom we diagnosed glioma of both eyes. One of the eyes was giving considerable pain and we removed it. We exhibited it to a pathologist and it proved to be the characteristic glioma, or sarcoma, as some call it now. The second eye was affected in the same way and total blindness occurred in six months. That eye was removed four years ago and the girl is in a blind asylum today.

Dr. E. C. ELLETT, Memphis—I should like to report two cases. The first occurred in the practice of a friend of mine who enucleated both eyes of a child 1 year old. All the orbital contents were removed and one eye was sent to Dr. Pruden of New York, and the other to a pathologist in Brooklyn. They agreed in the diagnosis. The patient is now, after eighteen years, a healthy individual.

The other case was a child 2 years of age, brought to me in April, 1897, with the history that since birth the right eye had been noticed to greatly enlarge and, as the mother expressed it, "something white could be seen in the pupil." The eye had begun to shrink some weeks before I saw it. I thought it was a case of detachment of the retina, and as the examination did not cause me to suspect anything more than detachment, I advised taking the child home. In August of the same year the process began in the other eye and they brought the child to Memphis to consult another oculist, who made the diagnosis of glioma and enucleated that eye. The child died this year of a recurrence.

The eye which was affected when I saw her did not up to the time of death present any evidence of further advancement of the process, whatever it was, and of course it must remain a queston whether it was detachment or glioma in the first eye.

Dr. GARTEN—Dr. Thompson quoted an authority who had examined 50,000 cases and had seen but three cases of glioma. My impression is that there is not a man here who can not report one or more cases that have come under his notice, and the question arises, are we all wrong in our diagnoses? I have seen four cases myself and would report about the same results as given by the other gentlemen.

Dr. T. A. GRIGG, Butte, Mont.—I would like to say a few words upon this subject and would like the gentlemen who discuss it further to give an opinion along these lines, that is whether in operating for glioma they simply enucleate the eye, or whether they remove all the orbital contents at the same time; would not the results be better by removal of all the orbital contents?

I have had two cases operated upon in this way, one of three years' standing now, and there has been no recurrence. Dr. Thompson did not state how his operations were done, whether enucleation simply was done and the orbital tissues left for cosmetic effect, or whether the contents had been removed.

Dr. H. V. WÜRDEMANN, Milwaukee—I am pleased to learn from Dr. Thompson's large experience that there has been such a large proportion of recoveries after operation. I have seen out of about 8000 cases, 5 of glioma of the retina and 3 of these have come to operation. All of these cases have died within six months after the first diagnosis. The trouble with most cases of intraocular tumor, as you all know, is that many of them come to us too late to insure a satisfactory prognosis. They come when inflammation has set in and the eye has become infiltrated with new cells. The question of diagnosis of glioma is one that it seems to me is readily determined by the history. There are a number of inflammatory affections of the eye that on ophthalmoscopic examination, may seem to look like glioma, but the diagnosis can be made from the history, together with the existing conditions. As a rule there is no tension, there is inflammation, and the ophthalmoscopic appearances are almost characteristic. The cases are all fatal if not operated upon.

I have a specimen of glioma here, which I pass around for examination. It was diagnosed within a few months of its inception but an operation was refused. Three months later the patient came with an eyeball full of the tumor mass, and I enucleated with slight hope of saving the patient's life. The tumor reformed in the orbit and the child died within three weeks. This section shows very well why, when we operate at so late a date, we meet with failure.

Dr. CHARLES H. BEARD, Chicago—I have had several cases of glioma occurring in dispensary practice upon which no report has been made, and in only one of which did we get a microscopic examination. That case was a little baby less than two years old. The patient recovered and reports to me now from time to time. Another case which occurred in my private practice is that of a little girl who also reports to me occasionally. Those are the only two cases that I have treated which I know to have been glioma and which I know to have recovered.

Dr. C. D. WESCOTT, Chicago—I wish to mention one case of interest from the standpoint of the diagnosis. The patient was

child 3½ years of age, first seen when the symptoms had existed for one year. The clinical diagnosis of glioma was made. The tension was up and the eye slightly painful at times. Ophthalmoscopic examination demonstrated the fact that the tumor was a non pigmented sarcoma of the choroid. Tumor cells were found in the optic nerve and in three months the tumor was visible in the orbit. I exenterated the orbit after six months, but the child died six months later of another recurrence.

Dr. J. O. McReynolds, Dallas, Texas—I have been very much interested in this subject, especially with reference to pseudo-glioma, because I have recently had a case which seemed to belong to that type. I have seen only four or five cases of glioma, about half of which have been fatal. The case of pseudo-glioma occurred in my practice about two years ago and was observed by others. I advised removal of the eye, the growth having been in progress about three years. I saw the patient about a week ago, and he is in perfect health without recurrence. An examination of the eye afterward showed it to be a pseudo-glioma, that is, it was not regarded as true glioma. I would like to know whether there is such a thing as pseudo-glioma. This case was first diagnosed as detachment of the retina and progressed for several years without increase of tension.

Dr. H. M. Starkey, Chicago—I will pass around to go with Dr. Würdemann's specimen, two cells containing the hemispheres of an eye enucleated by myself one year ago last March. Ophthalmoscopic and microscopic examination shows it to be glioma. As there has been no return of the growth, we may reasonably suppose that there will be none.

The eye was removed the day following that upon which the child was first seen. The tumor had not penetrated the globe, but had it extended along the optic nerve, which was severed well back in the orbit.

The statements of the comparative rarity of glioma have been a little surprising to me, as the proportion of cases of this disease coming under my observation is much greater than that given by most of the German writers.

In two of my cases the removal of the eyeball has seemed to have entirely eradicated the growth; the case mentioned above and another seen in perfect health sixteen months after the operation.

Dr. D. S. Reynolds, Louisville—I do not wish to prolong the discussion, but I am amazed at the opinions expressed and am tempted to cull just a little from memory, for I have no record with me now to quote from. It seems to me that in thirty years I have seen more than a dozen cases of glioma. In 1869 I saw my first case in a child about two years of age. She still had sight in the eye, but it was noticed that there was a little yellow reflex on looking into the shaded pupil. Examination showed a tumor by the side of the optic nerve entrance. I pronounced it in all probability a glioma and suggested enucleation. The late Dr. Sloan, of New Albany, advised that we wait a few weeks and see the child again. That was done and the tumor had almost doubled in size. I operated and the other eye did not show any manifestation of trouble until 1873, when she began to have a little irritation in that eye. An examination showed the same kind of golden colored tumor, clearly within the retinal substance. The eye was enucleated and microscopic examination showed it to be a glioma purely within the retina and not invading the other structures except the contiguous portion of the choroid.

As to there being such a thing as a pseudo-glioma, I take it granted that diagnosis was not clear; it means something else, and not glioma.

I am sure Dr. Wescott's case can be duplicated by many other gentlemen. I have known them to invade not only the globe, but all the orbital tissues, as I have more than once reported cases of this kind. I have stood as almost the single advocate, in my part of the country, of enucleating all cancerous eyes, and scraping out the tissues of the orbit for cancerous growths.

I had an old blacksmith upon whom I operated in 1875, and who recovered his health, went back to work and enjoyed comparative comfort for five years, when the tumor again appeared and he finally died of cancer in other organs. At the time of operating a mass of cancerous tissue as large as the patient's head protruded from the orbit.

The exact counterpart of these tumors is found in the optic nerve and in the brain. It is essentially a tumor of nerve structures, and if not, it is not a glioma. I have operated in cases of glioma and had the misfortune to see the tumor appear elsewhere and the patient die. I know of no complete recovery except the first mentioned case and she, for many years, was a teacher in the institute for the blind.

Dr. Flavel B. Tiffany, Kansas City—In my experience of twenty years I can recall eight cases that I have had, three of them double. In these cases all were under seven years of age, and I believe that it is the experience of all of us that glioma appears in the young only. My cases, with the exception of two, were negroes, and it has occurred to me that this disease may be more frequent in that race than in the white, and that perhaps that would account for our seeing more cases in this country than are seen in Europe.

When the eye is ruptured and the tumor protruding I exenterate all the orbital contents, but if the tumor is confined to the eye I can only enucleate.

Dr. Boyd—I can only report one case but that is a rather peculiar one, for I found that two others in the same family, brother and sister, had died of the same cause. The father and mother were both healthy. My case died, making three out of five children to die of glioma of the retina.

Dr. R. F. LeMond, Denver—I have seen three cases of glioma of the retina and can not agree with Dr. Tiffany that they occur only in the young, for of my cases one was 52, one 55, and the third, now under treatment, 53. I operated upon two of them and one died.

Dr. Herbert Harlan, Baltimore—One of the gentlemen laid some stress upon the importance of urging upon the patient the necessity of having the operation performed. I have lately seen a case that has caused me to give much consideration to that point. The patient is a child 8 months of age, and in March last the mother noticed something white in both pupils. The pupils were partly dilated and the child could see objects and take hold of them. The diagnosis of glioma in both eyes was made and I have seen the child every three weeks until a few days ago. There is no evidence now of perception of light, though the pupils react slightly to strong illumination. This happens to be the child of an intelligent physician, who understands the matter thoroughly, for he has had the opinions of three oculists, and he declines to permit interference in any way. So while it is well to advise operation there are some cases in which it is impossible to do what we think best.

Dr. D. C. Bryant, Omaha—I would like to add about a half a dozen cases to those reported. Three of them were seen after perforation had taken place, but before any extensive growth had occurred outside. In these cases all the contents of the orbital cavity were removed, but a short time afterward recurrence took place and death followed. In the other three cases, where there was no perforation, two had a return a short time after enucleation and died. The remaining case was enucleated four years ago, has had no symptoms of return and the patient is well. This was a child about 1½ years old.

R. L. Randolph, Baltimore, Md., said that Greef had recently made some observations in regard to the histology of these tumors which he has been able to confirm. Randolph has noticed that in sections of gliomata stained with hematox-

ylin the cells immediately about the blood vessels are more deeply stained than those lying at points remote. This gives to the tumor almost the appearance of angioma. This condition is to be accounted for in a large measure by the high intraocular tension, which has the effect of squeezing out the life of the cells remote from the blood vessels, and consequently these cells appear in the sections necrotic, while those surrounding the vessel retain their vitality and stain deeply. Recent work has shown that the tumor does not originate, as was once thought, from the external or from the internal granular layers. It will be remembered that the cells in a glioma morphologically resemble those in the granular layers of the retina, and this seemed a strong reason for supposing that here the tumor originated. Improved methods of staining, however, have shown that the tumor cells are not only like those in the granular layers, but that they are of different sizes and shapes, some being oval and some having processes and resembling a rosette. The theory as to the origin of these tumors is new. It is not an uncommon thing to find in a normal retina cells which are out of place, that is to say, cells in one layer which morphologically belong to another layer, as, for instance, ganglion cells in the internal granular layer, and vice versa. These cells have been called by Cajal, Wintersteiner, Greef and others, misplaced cells, and these observers have noted that gliomata are made up largely of these misplaced cells. The conclusion is then that a glioma orignates from a cell which is misplaced in fetal life, and which misplacement may occur in any one of the retinal layers.

Dr. THOMPSON—In closing I would like to say that those cases which have returned have done so inside of seven months. I have never had a patient over 6 years of age with glioma. I can recall tumor after tumor of a sarcomatous type, but they have been after 7 years of age, so I conclude that age assists in the diagnosis. One gentleman asked whether I took out all the tissues of the orbit in my operations? No, I do not think of any such thing if the tumor is confined to the eyeball. I enucleate, cutting the nerve as far back as possible, if the growth has burst through the globe then I remove all the orbital contents. If I cou.d have taken the time to have read all of my paper you would have seen why I operated differently in different cases.

I can not conceive of a person confusing glioma with detachment of the retina if the patient is seen in private practice. Such a mistake might be made in the hospital, where in seeing a large number of cases you make a snap shot.

As regards pseudo-glioma, as one gentleman has said, it is either glioma or it is not glioma. It is glioma I was talking about. If any gentleman here should mistake these two conditions I should be inclined to pay no attention to him at all.

I think we should advise early enucleation, and tell them they will die just as sure as can be if they do not have the operation performed. Then I presume those that die are glioma, and those that do not are pseudo-glioma.

A CASE OF "MATHEMATICALLY-PERFECT EYES."

Presented to the Section on Ophthalmology, at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7-10, 1898.

BY GEORGE M. GOULD.
PHILADELPHIA, PA.

On Oct. 12, 1897, I was consulted by a gentleman 50 years of age, whose chief complaint was of subconjunctival hemorrhages, which had occurred on an average every two weeks during the past year. I found that he had consulted a great many oculists during this time who had either given general treatment for gout (of which there was some slight evidence) or had sent him to the general practitioner, or had only prescribed reading-glasses, etc. The hemorrhages seemed to come on spontaneously and were bothersome chiefly because they gave the man such a frightful appearance, and caused mental worry, rather than any decided pain or trouble of vision. One eye was generally affected at a time, and as the hemorrhage only stopped when the subconjunctival space was thoroughly filled with blood, the appearance of the eye and patient is easily imagined. I frankly asked the gentleman what he supposed I could do for him when the large number of the best men of the city had failed. His own faith was plainly little, but I was compelled to try. General disease of any pronounced type was excluded by thorough examination; the family history and personal history were beyond reproach, and one of our most careful "internists" had treated him on general principles for this one ocular symptom without influencing it in the least. The muscular co-ordinations of the eyes were as perfect as they could be, and by all nonmydriatic tests both eyes were absolutely emmetropic; the visual acuity was 20/20 +. Indeed the man had soon told me that he was an optical curiosity, other oculists having marvelled at the emmetropism of his eyes, and one especially—a man of large practice and scientific ability—had repeatedly said that his was the only pair of "mathematically perfect eyes" he had ever seen. It was certainly a gloomy outlook for the man with a fad—the "oculist hobby rider."

Relying however upon the results of many experiences, I proceeded to work upon the basis of what have become axioms with me, viz.: *No mydriasis, no diagnosis of refraction.* and, *all presbyopia is only relative.* Under a mydriatic I found the visual acuity as perfect as it had been without it. Then I comforted myself with another maxim: *Perfect visual acuity is no proof of the non-existence of an error of refraction,* and I was soon able to demonstrate an error as follows:

R. — Cyl. 0.25 D. ax. 90°
L. — Cly. 0.25 D. ax. 180°.

Now I did not say to myself that this tiny error of refraction was the cause of the conjunctival hemorrhage; I did not then dream that it was, and told the patient that if any local cause for this existed I believed it to be due to the failure to use presbyopic glasses while eating meals, card-playing, etc. With this end in view I ordered bifocal spectacles, for distance the cylinders as above, and for near a proper spherical added. Then came downright rebellion; the man was mad at the idea of wearing the "hideous things." I said, then, that this was my prescription, and unless followed, I stood discharged. He went away savage and disgusted, but did order the bifocals, wore them part of one day, and more wrathful than ever ordered the optician to turn them into separate pairs of eye-glasses. As I had washed my hands of the case I allowed the optician to do as the man desired, and not seeing him again I supposed he had left me for another and a less dogmatic adviser. I had quite forgotten about the matter, when in two months my office-boy brought up a bill my secretary had sent the man, with a check to pay it, saying the gentleman had asked to have the receipt signed, would not come up, etc. Luckily I remembered the name, and returned the receipt by my own hand, impelled by a certain quizzical curiosity. He was evidently in a very different mood, said he did not want to trouble me, intended writing, etc., but was glad now to tell me how happy

he was with his eye-glasses. I have seen him several times since and to shorten an overlong story I will say that not only has there been no recurrence of the hemorrhages except one very small one, since getting the glasses, but a previous discomfort, uncomplained of, and hardly recognized, is completely relieved, but returns at once if the low cylinders are not worn; this discomfort is now so decided that he has had made heavy steel spectacles to wear in his bath, the sense of pressure and irritation becoming so great even in a time so short as that.

I shall not now attempt to explain the *modus operandi* of a low astigmatism producing so severe and unwonted a result as these hemorrhages. That it did produce them I have not the shadow of a doubt, and the method is perhaps readily enough divined by all of you. There is only a single negative I wish to emphasize, and this is the reason I have gone into the rather gossipy details of this case; there is not the least crevice through which may creep the suspicion of hypnotism or autosuggestion. The man was mad at me, and I was provoked at him; he refused to follow orders; had no faith in the diagnosis or the doctor, and as a last climax-clap, I was utterly mistaken in my diagnosis! It was not the need of bifocals, or of presbyopic correction, that was the true etiologic factor, but simply the low myopic reversed astigmatism. The fact of this only came out through unfaith and indirection, by wearing the forbidden eye-glasses.

This has led me to entitle this report a case i.e., an instance of disease of emmetropically-perfect eyes, and so many lessons are suggested by it, lessons which I myself have long needed, and which, perhaps, one or two of you may profit by, that I have been moved to report the case, chiefly for the fun of the *hæc fabula docets*. These shall be most briefly recaptulated:

1. The most important lesson that springs into view, one which every day, and in every journal, and in every other case-report, should be printed in double-caps is this: Although a patient has been examined by one or more good oculists, and glasses prescribed, or reported as not needed, the fact has no significance whatever. It does not prove that eye-strain does not exist, nor that it is not a source of any of the results that eye-strain may produce. This seems extreme and even revolutionistic, but it is literally true. In this case the proof of the pudding is not in the eating. There are a hundred qualifications needed to the bald statement that "glasses did not lessen the symptoms," or "the oculist reported the eye-examination was negative," or "eye-strain was ruled out by careful tests,' etc. I do not care a button for such assertions; they are simply meaningless unless very many other considerations go with them. Do not for an instant think I make an exception of myself, or wish to cast any slur upon the work of others; that would be simply silly. What I mean is, that in these infinitely delicate matters, in these calculations of infinitesimals, slight differences, inobviable personal equations, etc., may indeed occur and be the reason of failure; but beyond all this there are numberless questions: e. g., as to correctness of make and accuracy of adjustment of the glasses; as to methods of wear or non-use; as to habits and peculiarities of eye-work; as to length of disease; as to suddenness of consequent refraction-changes; as to the frequent impossibility of curing a result by curing its cause; as to complicating causes; as to intercurrent general diseases, etc. Not only in the case reported but in hundreds more I have learned that my own errors, mistakes and blunders, as well as those of others, may show the fallacy of a single judgment; a multitude of provisos must be excluded and the subsequent history closely scanned in order to prove or to disprove the lumpish dictum, "glasses gave no relief." Facts are stupid and useless things without an intellect to discriminate, marshal and use them. It takes more than a lot of rocks to make a lock or a breakwater.

2. A very slight uncorrected error of refraction may be the cause of strange and serious reflexes and results, and this is especially true if it be unsymmetrical astigmatism, and still more surely if it is a low-degree myopic astigmatism, in which there are no means of escape by blunting into amblyopia, or by shunting into heterophoria, and no possibility of ciliary-muscle contraction overcoming the defect.

3. Low-grade myopic astigmatisms are hard to diagnose, and are in practice too commonly overlooked and neglected, although they must be as common relatively as hyperopic varieties.

4. It is only by the mydriatic, combined with infinite patience, delicacy, and skill, that such astigmatisms are correctly diagnosed. Perfect visual acuity is no disproof of coexisting ametropia.

5. The mydriatic is more necessary in presbyopia than previously. All the text-books and teaching is wrong in this. Precisely when the compensatory mechanism is being narrowed by presbyopia, is then the greatest need of accuracy in the correction of the smallest degrees of anisometropia and astigmatism. Then, also, the vital powers are failing and the cataract-age is nearing, so that precision in refraction is doubly and trebly imperative. Presbyopia is always relative, never absolute, particularly if proper glasses have not been worn during many previous years. Without a mydriatic there is no accurate estimate of errors of refraction, and between the ages of 40 and 55 the estimate should be painstaking to the uttermost degree, especially if any suspicious reflexes exist.

6. Absolute emmetropia, "a mathematically perfect pair of eyes," does not, I believe, exist. A perfect leaf has not been found, nor absolute symmetry in any organic thing. The report of perfect emmetropia is a confession of negligence and unskilfulness. I have made such reports myself and can therefore speak dogmatically. If such a diagnosis has been made without a mydriatic the negligence deserves a much harsher naming.

7. And even if there were such a mathematically perfect pair of eyes, I can easily imagine circumstances in which the use of such eyes might be the cause of morbid results. As othophoria is always a disease, so emmetropia, in a seamstress or in almost any hard-pushed eye-worker, in a neurasthenic, in a heterophoric, or in a presbyope, may functionally be a disease and require correction by glasses. Emmetropia is nature's unrealized ideal for the animal, savage, and primitive man. A low-degree simple myopia, alike in both eyes, is the desideratum of the slave of civilization.

To focus this long-winded reading into a sentence, I should say that when a possible or suspicious ocular reflex exists, painstaking mydriatic refraction and correction are necessary both in presbyopia and in "a mathematically perfect pair of eyes." And when this has been admitted comes the rider that even after all has been done it can not, with utter certainty, be said that the eye-strain was not, or is not, the ultimate source of the morbid symptom.

Since writing the above my friend, Dr. H. O. Reik of Baltimore, sends me the following note:

On Feb. 1, 1898, a lady, aged 30 years, consulted me because of slight subconjunctival hemorrhages of both eyes, which, she said, had recurred a number of times without any known cause. She was otherwise in perfect health. She remembered that during her high-school life she had been subject to somewhat similar attacks, which came whenever she was doing an excessive amount of reading and study. Lately she had been using the microscope very constantly and had also been reading a good deal. These were none of the usual asthenopic symptoms. Vision was perfect, and there was no manifest hypermetropia. The muscle-balance was also good. Examination under homatropin showed the following error:

R. E.—C. 0.50 D ax 90°
L. E.—C. 0.50 D ax 180°

The above glasses were prescribed, and since that time she had no more trouble of the kind.

I find in my record-book the diagnosis "subconjunctival ecchymosis due to refraction error."

It is noteworthy that the error causing the trouble in both the case of Dr. Reik and my own, was a low degree of myopic astigmatism at reversed axes.

DISCUSSION.

Dr. C. B. WESCOTT, Chicago—I am sorry we could not have heard the last page of this paper. I have always been a firm believer in the use of mydriatics after the age that they are usually thought of by my brothers and fathers in the profession. Since my visit to Philadelphia, last year, I have been using them in my older patients. I think the oldest was 64, and I must say the more I use them the more satisfactory I find them. I quite agree with Dr. Gould, that it is fully as important to correct the low degrees of errors of refraction after forty years as before, and I am doing it with great delight.

Dr. J. E. MINNEY, Topeka—I want to emphasize one point the doctor made. I was two years getting proper glasses when my error was very small. Secondly, I believe the blood-vessels of that man's eyes were not normal, and I would suspect that there would probably be in the future some brain lesion, and if it was a case of mine I should warn the patient to be on guard.

Dr. G. C. SAVAGE, Nashville—The question of why astigmatism should be more troublesome if vertical in one eye and horizontal in the other, has not been fully set forth, so far as I know. I believe the increased trouble experienced by patients of this kind is due to the fact that the visual axes, in order to harmonize images, throw upon the recti muscles the necessity for breaking their regular movements. We all know, as set forth in a paper by Dr. Jackson, that the image is elongated in the direction of the meridian of greatest curvature. If elongated horizontally in one eye and vertically in the other, the superior rectus of one eye rises to one point and that of the other must go a little beyond it; and, so in going from side to side, for there must of necessity be fusion of images of the part looked at. If one axis has to go so far and the other farther, you can see there is at once a disturbance of harmony. I believe that astigmatism against the rule in one eye and according to the rule in the other, is of more importance to patients on this account.

Dr. HAROLD GIFFORD, Omaha—While I started out as a skeptic concerning the correction of so small a degree as one-quarter dioptre, I want to report that I have obtained a good result in one case, that of a homeopathic physician, by prescribing a one-eighth dioptra glass.

To Protect Animals from Flies.—According to the *Journal d'Hygiène*, flies and insects will not molest an animal if it is smeared lightly every morning with a salve made by boiling a large handful of laurel leaves in a kilogram of lard. Follow the direction of the hairs.

THE GALVANIC CURRENT FOR THE TREATMENT OF PTERYGIUM.

Presented to the Section on Ophthalmology at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7-10, 1898.

BY HORACE M. STARKEY, M.D.
CHICAGO, ILL.

Since electricity has been used in almost every diseased condition of the eye and its appendages, from senile cataract to stricture of the nasal duct, a brief enumeration only of these various uses would consume all the time allowed. This will not be attempted, but attention will be confined to the use of electricity in one condition—pterygium.

Six years ago at the Detroit meeting of this Section the writer made a brief statement concerning the treatment of pterygium with a weak galvanic current which he had been employing with apparently good results for about two years, and requested members of the Section to give the method a trial. While he is not aware that that request has met with any response, he has continued to employ the method then outlined, and longer experience has convinced him that it has decided value in suitable cases.

In September, 1889, the writer, who was at the time much interested in the study of electricity, saw a pterygium that it appeared to him at once would be favorably influenced, if not entirely removed, by the galvanic current. The pterygium was small, the apex just commencing to encroach upon the cornea, and was composed of a few large blood-vessels with a minimum amount of connective tissue and thickening of the conjunctiva. The patient was seen but for a few moments and promised to return in a few days for further examination and treatment. He did not, however, return for nearly a year, and in the meantime no other case was seen in which the conditions seemed favorable for the treatment.

June 2, 1890, however, the patient, S. J. F., age 36, machinist, referred by Dr. Creighton, returned, and the proposed treatment having been explained to him, he consented to a trial of it, and the positive pole, a platinum needle, carrying a current of three milliamperes was used in the method to be described. The current was passed through the pterygium in three lines for one minute at each place, with the inevitable result that the lumen of the enlarged vessels was closed. The patient was to have returned in a few days for observation and further treatment, but nothing was seen of him for nearly a year, when he was met upon the street. In answer to inquiry as to why he had not come back, he said that the eye had been entirely cured by the one treatment, and that he had not thought it necessary to return. An inspection showed that the enlarged vessels had disappeared and that there was but a very slight thickening of the sub-mucous tissue remaining. The patient has been seen from time to time as late as 1896 when, notwithstanding several attacks of mild conjunctivitis, the pterygium remained unchanged. For two years now he has passed from observation. This case is given somewhat in detail, and while it is the first case treated in this way, it is the most brilliant in its results.

Since this first case from two to four pterygia have been treated in this manner each year in private practice, nineteen in all, and about the same number in dispensary and hospital work. In every instance the pterygium has been reduced in size, and in most

cases the growth has been entirely checked; and while in about 50 per cent. of the cases the cure has been radical, in about 20 per cent. the growth has recommenced at a later period, and some form of operation has been necessary. The percentage of recurrences has been less than after excision or other operations commonly employed, and the recurrences have been nearly all in cases that were unsuitable for electrolysis and where some other form of operation should have been adopted.

The cases which seem to be suitable for electrolysis are those with small pterygia, not encroaching much upon the cornea, and particularly those in which there is considerable enlargement of blood-vessels. Experience seems to show what a knowledge of the action of electricity upon the tissues would lead us to expect that commencing pterygia that are as yet too small to be harmful may be entirely checked by two or three treatments so that they remain quiescent indefinitely. A number of cases have also been treated in old and feeble people who evidently had but a short time to live and in whom the dread of operation was very great. In these cases the sight has been improved, irritation allayed and both the patients and their friends have been very grateful for the relief obtained. The way in which the electricity acts upon the tissues is as follows:

1. It coagulates the blood in the vessels, thus stopping the blood current and causing the vessels to disappear. 2. It produces a mild adhesive inflammation of the sub-conjunctival tissues, thus forming a firm cicatrix between the conjunctiva and the sclera, so that the gliding of the former over the latter is prevented, and 3, it destroys micro-organisms in the tissues, so that, if the claims advanced by certain investigators that micro-organisms are the cause of this disease should prove to be well founded, this treatment would still be rational.

These effects are all produced by the positive pole when used as the active agent. When the negative pole is used we get solution and absorption of the submucous hyperplasia and of the thickened conjunctiva.

The method of employing the current is as follows: Any source of electricity may be employed, provided it produces a smooth, constant and certain current of sufficient electro-motive force to overcome the resistance of the body, and provided further that it can be so controlled as to deliver a current of from one to five milliamperes. The current should be completely under control and should be accurately measured by a reliable milliamperemeter, which should measure fractions below five milliamperes. The current at the terminals should be tested before each operation. The apparatus being in good order, the eye to be operated upon should be cocainized and a fine platinum needle, connected with the positive pole of the battery, should be introduced through the conjunctiva near the apex of the growth, and passed close to the sclera through and beneath the pterygium, and at a right angle to the direction of the growth. The circuit may now be completed by having the patient press a well wetted sponge connected with the negative pole against the palm. The currents should be turned on till the meter shows that one, two or three milliamperes are passing.

This current should be maintained for one or two minutes. A second puncture should be made in a line parallel with the first and two millimeters distant, and if it is thought desirable a third may be made. The immediate effect seen is the formation of gas, which appears in bubbles upon the surface at the points of entrance and exit of the needle, and which cause some puffiness of the conjunctiva along the line of puncture. Considerable hyperemia of the conjunctiva is occasioned, but large vessels with which the needle comes in contact are more or less collapsed. The pain occasioned is insignificant, and while there is some feeling of irritation and fullness in the eye for a few days, this has not been sufficient in any case to prevent the patient going about his regular duties. The treatment may be repeated in four or five days, or it may be delayed as many weeks, at the convenience of physician and patient.

The advantages of this method are: First, it avoids any loss of tissue; second, it is painless; third, it does not incapacitate the patient; fourth, it stops the progess of pterygia seen in the early stages. With these advantages is coupled the fact that it seems quite as free from recurrences as any other method. It is not advised except as a palliative in broad, fleshy pterygia or in those encroaching much upon the cornea.

NOTE.—It is well to use a small current at the first application that the irritability of the eye may be noted.

NOTE.—Doubtless it is well understood by all that it is not the direct action of the electric current that produces these effects. The current decomposes the salts in solution in the tissues into their acid and alkaline constituents, the acids appearing at the positive pole and the alkalies at the negative pole. The acids at the positive pole have a charring, contracting and hardening effect upon the tissues of the body and coagulate albuminous fluids, while the effect of the alkalies at the negative pole is to soften, dissolve and liquify those tissues.

THE VALUE OF FARADISM IN CHOROIDITIS.

Presented to the Section on Ophthalmology at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7-10, 1898.

BY ROBERT F. LEMOND, A.M., M.D.

PROFESSOR OF DISEASES OF THE EYE AND EAR, GROSS MEDICAL COLLEGE, DENVER, COLO.

The title of my paper is one that would naturally be called somewhat rare among ophthalmologists. I have in the last few years come in contact with a great many cases of the various kinds of choroiditis, and have studied the pathology of all the cases very closely. The various kinds of choroiditis are more or less akin, that is, in regard to the puzzling problems that they so often present to the oculist, from the fact that choroiditis has been so hard to completely cure. We have choroidal affections, some of the most common of which it might be well to mention, namely: the areolar, atrophic, disseminated, simple, plastic and suppurative. Now it does not matter a great deal about the different names of these troubles, for they differ more than the real conditions of the choroidal layer, from an etiologic standpoint. I have often been very much puzzled to know what has caused this condition of the eye; we so rarely get a history of the case that helps us out, and so frequently we can get no syphilitic history at all, when often that is the real source of the trouble. But I believe that choroiditis results from various conditions. For instance, we have it in extreme cases of myopia, in the various brain tumors that we come in contact with, which we know are conducive to this character of trouble, and

in other cases where the system is depleted and run down. So far as my experience goes, I find the majority of cases over 40 years of age, but have treated a number under 30, and my record book shows that about two to one of these cases are in favor of the male sex, as they are more often contaminated with syphilis than the female, and I believe that the majority of these cases originate from syphilis. The opacities in the vitreous excite various influences on the vision and in different ways. For instance, opacities veil the entire visual field, while a large floating opacity interrupts the luminous rays by moving between the retina and the object, thus destroying perception of smaller objects altogether and very much impairing the visual acuity. In the last condition the patient will frequently learn to hold his eye still for a moment, looking directly in front, when the vision improves, the laws of gravity intervening. So far as treatment is concerned, we know it has been for a long while a well-blazed road, and that we should be very careful and guarded in the prognosis that we give, for fear we make it too flattering and lead the patient to believe that there is nothing the matter. The object that would naturally present itself would be to have these floating bodies in the vitreous destroyed, and reasoning upon this from a scientific standpoint, we come to the conclusion that the only way to do this is to absorb them, as we have found from long experience that leeching, scarification and paracentesis of the anterior chamber do not help us out of our dilemma. Then we must give something that will absorb this coloring matter from the vitreous, if it can be done. The next question is, what are our best medicines for this purpose? We at once decide that the kali iodidi is one and the bichloridi hydrargyri corrosive is another, and the stimulation of the circulatory system, especially the heart, if not at its full normal strength. I think the influence of the infusion of digitalis about three times a day is about as good as we can use for this purpose; aside from this it is thought well to stimulate the nervous system also, and a favorite nerve tonic is sulphate of strychnia. But we learn from experience in many cases in which these medicines have been used that they will fail to do the work. Then we naturally look and inquire in some other direction for a remedy that will do the work; we ask ourselves the question: What is electricity? Is it not a stimulant? Stimulate the circulation and nerve centers, and all the functions of the body are excited, and if it is given to anything like full toleration it is certainly one of the greatest stimulants that we know anything of. Now I have investigated and looked over a great many authors, and been able to find but little encouragement for using faradism in this character of eye trouble. I find that Girard-Teulon, Lefort, says in Meyers' work on the eye, that "the constant current has been recommended for the rapid absorption of these opacities," but the constant current is negative. Later, in the Philadelphia Polyclinic of April 24, 1897, Dr. de Schweinitz of Philadelphia insists upon the value of faradization of the eye in interstitial keratitis. If it is good in keratitis of this character, why not use it in choroiditis, as we know that the cause is the same in both troubles? In fact, many writers claim that keratitis is dependent entirely upon syphilis. I do not claim to say that in connection with these absorbents which I have mentioned, electricity will cure all choroidal troubles. I want to say in justification of my position regarding the treatment of these cases, that I have used electricity for the past three years and in the past few months I have given this treatment a thorough test, and we can not get anything that will substantiate us like living facts. In conclusion, I will report three cases which I have had in the last eight months, as follows:

Case 1.—A lady, 55 years of age, had been treated for about twelve months before she came into my hands. She told me that she had taken iodid of potassa in very large doses almost the entire time, also strychnia, and that she had gone blind during this time. I examined her with the ophthalmoscope and I found that the vitreous was literally full of floating bodies, and the fundus oculi could not be discerned at all. The vision in the right eye was light perception only, in the left she read sixty feet type at 30 inches. I could get no history from her case that was worth anything at all to me; she was a strong, seemingly healthy woman, had never had any eruption on the body at all. I told her that I would give medicine internally and apply electricity to the eyeballs externally. She at once objected to this and said she was afraid of electricity; I tried for several weeks with the internal treatment, when I had increased the kali iodid to 50 grains three times a day and the bichlorid hydrargyri to $\frac{1}{20}$ grains three times a day. She got no better, but grew worse. I then insisted that she allow me to apply the electricity, to which she finally consented, as I refused to treat her longer unless she would abide by my directions. In her case I commenced giving her the positive pole faradic current, from five to eight cells, in each eye five minutes daily through a wet sponge. Within a week's time she began improving; I kept this up for four months, at the end of which time her vision had gained to O.D.V.=$\frac{15}{120}$, in the O.S.V.=$\frac{15}{60}$.

Case 2.—A Mr. R., aged 30 years, eyes had been failing for several months. Diagnosis choroiditis, syphilitic, although no history of syphilis. I found with the ophthalmoscope that the vitreous was literally full of floating bodies; his vision in the O.D.V.=$\frac{15}{200}$, O.S.V.=$\frac{15}{60}$. I put him on kali iodid, 20 grains three times a day and increased it until he reached 60 grains three times a day, and bichlorid $\frac{1}{30}$ grain per day, increasing the doses until I gave him $\frac{1}{15}$ per day. I also gave him the faradic current (eight cells) in each eye five minutes every day. At the end of one month's treatment his vision was O.D.V.=$\frac{15}{20}$, O.S.V.=$\frac{15}{40}$, and he thought he was well enough to quit and went home.

Case 3.—A man aged 30. Seemed to be in fair health, with no syphilitic history; ophthalmoscopic findings the same as the former case—the O.D.V.=$\frac{10}{120}$, O.S.V.=$\frac{9}{120}$. He gave this history: His eyes had been failing for two years and he had been treated for months during that time without any benefit, but was gradually growing worse until his vision was growing so bad that he was almost compelled to give up his business, being a merchant. I put him on the kali iodid and bichlorid in increasing doses as in the former cases, with a faradic current of eight cells applied to each eye every day. In the meanwhile he told me, after taking the first dose of my medicine, that he had been taking this medicine and that he had no confidence in it, as he had tried it for nearly two years. I asked him if he had had the electricity applied to his eyes before. He replied, no. I told him that we would watch the case for fifteen days, and if he was not improved by that time that I would not advise him to continue the treatment; at the end of that time, however, he had gained about 25 per cent. At the end of two and a half months his vision measured O.D.V=$\frac{15}{60}$, O.S.V.=$\frac{15}{20}$. He was dismissed, as he thought he had vision enough to get along with very nicely.

I have reported three of the latest typic cases of this kind that I have had, but I could give you twenty cases, if necessary, in which this treatment has proven to be just as effectual as in the three cases I have reported.

DISCUSSION.

Dr. F. T. ROGERS, Providence—I question the advisability of discussing the use of electricity when quoted in such indefinite terms as the writer of the last paper uses. To say that you used twelve cells does not mean anything. You may have a cell of 4 milliampères or one of 15. The milliampère is the important feature and not the number of cells used. I have used the galvanic current on my own eye as a matter of exper-

nt and I find that 3 or 4 milliampères is all I care to stand. ch generalities are worthless in a scientific report.

Dr. J. E. MINNEY, Topeka—Not knowing anything about the bject I may be able to give you some information. It struck the Doctor gave larger doses of anti-syphilitics than the er fellows and that there was the secret of his success.

Dr. C. E. NORTON, Lewiston, Maine—I do not know anyng about this subject but rise to make inquiry of the reader the first paper. I did not understand the direction in which inserted the needle in his operation for pterygium. I think, I understood him to say that he used the positive pole and bubbles of gas around the needle. According to my expence in electrolysis this would not be true, it would be the gative pole that gave the bubbles of gas, and the needle er having used this current would be extracted with some ficulty, as it would be held firmly by the hardened tissues.

Dr. LEARTUS CONNOR, Detroit—I have used electricity in a cases of choroiditis, but I was not able to determine that had any appreciable effect upon the course of the disease. I glad that somebody else has had success. Possibly my thod of using it was faulty. I have not used electricity in treatment of pterygii, but I shall be induced to do so by Starkey's experience.

Dr. GEORGE M. GOULD, Philadelphia—My friend, Dr. Allen of Brooklyn, N. Y., was several years ago interested in aring up corneal opacities by electricity. I visited him at out that time and he was very enthusiastic in showing me veral cases that had greatly improved in vision. On a visit re last year I asked him if he was still keeping up this atment. He said no, that the patients got very tired of the atment before much could be accomplished, and gave it up rough lack of patience and perseverance. I believe he never plied more than two or three milliampères at one time.

Dr. R. L. RANDOLPH, Baltimore—I would like to ask what perience the gentlemen have had in the use of electricity for moving eyelashes? My own experience is that it is painful d in many cases fruitless.

Dr. MELVILLE BLACK, Denver—Some few years ago I read a per wherein the writer describes the effects of the negative le of the galvanic current for reducing tension in glaucoma. tried it on a few cases and think in one or two I could see an preciable reduction. In several other cases there appeared be no action whatever and it was a waste of time. For the moval of eyelashes the method is satisfactory enough if you n keep the lids quiet, but that is hard to do.

Dr. T. A. GRIGG, Butte, Mont.—I have had quite a little perience with the electric needle in removing cilia and wild irs. In some of my cases the results have been very satisctory and in others not so much so. In one case of wild hairs seemed to me that for every one I killed two came to the neral. I usually find that by using 5 per cent. cocain solun applied to the lids on absorbent cotton and then using a e needle with a stop on the handle so that you can keep the l still by drawing it up while the current is being turned on get very good results. I use a magnifier to see where the edle is going in and have the patient hold the sponge in the nd corresponding to the same side being operated upon. In econd or two I get a few bubbles, and then with a pair of ia forceps I can easily extract the hair. If it does not come sily it will generally recur, and it takes a good while to make complete cure.

Dr. J. O. MCREYNOLDS, Dallas, Texas—With regard to the estion asked by Dr. Randolph I have had considerable expence but I have not used this method so much during the t three years as I did previously. My main reason for distinuing it was the intense pain produced. The operation n be perfectly successful in removing the cilia and they will t return if thoroughly removed. My method is to have the tient hold the positive pole in one hand and steadying the head I insert the needle well down beside the hair, turn on the current gently and wait until the bubbles rise round the hair, when I can pull it out with my fingers. If the hair is still sufficiently firm to require forceps it will generally recur. The bubbles will always appear if the needle is in the hair follicle.

Dr. GRIGG—Can you always remove the hair with the fingers?

Dr. MCREYNOLDS—Yes, if I have done the work properly. The smaller the hair, of course, the greater the difficulty in removing it.

Dr. J. L. THOMPSON, Indianapolis—I reported a case some years ago in Knapp's Archives, which I might refer to to impress upon you the importance of using the positive pole. It was a case of cure when I knew nothing about the use of electricity and I must say my method was a good bit like operating upon a cataract with a nail.

Dr. HINCKLEY—I use a 20 per cent. solution of cocain, with 10 per cent. carbolic acid, inject about 2 drops, and have no pain in removing lashes.

Dr. H. M. STARKEY, Chicago—At the outset of this paper I thought to make a brief review of the general uses of electricity but later concluded it must be restricted to three things, the use of electricity in trichiasis in ocular neuralgia and in pterygium, and finally it was found that the latter alone would take all the time given for the paper.

It is well known that it had been recommended to use the negative pole in glaucoma. I can see a rational reason why the negative pole, which through cataphoric influence tends to withdraw fluids from the tissues should lessen tension, and I can readily see how by reversing the current we might in some cases favor glaucoma. Especially in elderly people have I on this account been careful in the use of electricity.

As to the question of gas appearing at the positive pole, we know where the gas comes from when electrolysis is used. If the poles be placed in water decomposition of the latter occurs, hydrogen appearing at the negative pole and oxygen at the positive—twice as much, however, of the former as of the latter. When the platinum needle is used and the current concentrated at the point we get a liberation of gas through decomposition of water and the tissue salts at that point and may have corrosion of the needle.

I have used the negative pole in some cases to assist in dissolving off cicatrices. In these cases of corneal opacities we use the negative pole, because we desire its dissolving action. The first case I used it upon was a man, who, through an explosion, had lost one eye, and the other seemed to be in a hopeless condition. By using 1 or 2 milliampères at a time for a period covering the greater part of a year, sufficient vision was secured that he was able to do a certain amount of work and later he became a gatekeeper at the shops where he had formerly worked. He could also read coarse print. I have not used it very much of late, but would again in a similar case to that.

The direction of the needle in operating upon pterygium is at right angles to the growth, or in other words it is passed in the same direction that the knife is passed in an excision.

Dr. R. L. LE MOND, Denver—I felt almost sure that I would not have a great many to agree with me on this paper and I am sorry that Dr. de Schwinitz is not with us, for he has given this subject much attention and claims that it has been very beneficial in his hands.

I have used the potassium iodid and the bichlorid of mercury in a number of cases without any practical results at all, and in one of these cases I used it until the patient continued to grow worse, and saying that she had gone blind under the identical treatment and had no confidence in it, I put her on electricity. I used the faradic current and she began to improve at once.

I do not think we understand as much about electricity as we should. In galvanism one pole is negative and the other less so, while in faradism, one pole is positive and the other

less so. That is the difference in the two kinds of electricity. As regards the number of cells, I understood the instrument maker that each cell represented 5 milliampéres.

PHLYCTENULAR KERATITIS.

Presented to the Section on Ophthalmology, at the Forth-ninth Annual meeting of the American Medical Association, held at Denver, Colo., June 7-10, 1898.

BY DUDLEY S. REYNOLDS, A.M., M.D.

Professor of Ophthalmology, Otology, and Medical Jurisprudence in the Hospital College of Medicine, Medical Department of the Central University of Kentucky. Surgeon to the Eye and Ear Department of the Louisville City Hospital; Surgeon to the Gray Street Infirmary; etc.

LOUISVILLE, KY.

At the meeting of the AMERICAN MEDICAL ASSOCIATION in 1893, I had the honor to introduce the subject of phlyctenular ophthalmia. My paper elicited extended discussion, embracing many divergent views both as to etiology and treatment. The result of that discussion determined in my mind the necessity of more painstaking observations. For reasons beyond my control, I was not able to begin my work until August, 1894, and I am now indebted to the painstaking labor of my friend, Dr. Travis A. Bullington, for the first part of what I intend to be a continuous series of observations concerning the nature, causes, and the treatment of phlyctenular ophthalmia.

The first series of observations by Dr. Bullington, and which I have the honor now to present for your consideration, is taken from my clinical record at the Hospital College of Medicine, beginning August 25, 1894, and extending through the first one thousand names on the list at my clinic. These persons have been kept under observation for a period of three years, ending August 24, 1897.

CASES OF PHLYCTENULAR KERATITIS.

Occurring in one thousand consecutive names, on the Clinical Register of Prof. Dudley S. Reynolds, at the Hospital College of Medicine, Louisville, Ky., beginning August 25, 1894; compiled by Travis A. Bullington, M.D.

No.	Age.	Sex.	Race.	Present Complications.	Recurrent Conditions.
1	19	M.	C.		Phlyc. conj.
2	25	F.	C.	Phlyc. conj.	
3	4	F.	W.	Phlyc. conj. eczema nasalis	Bleph. marg.
4	11	F.	C.		Phlyc. conj.
5	2	M.	C.		Phlyc. conj.
6	20	F.	W.		
7	4	M.	W.	Bleph. marg	Bleph. marg.
8	32	F.	W.		Phlyc. conj.
9	28	F.	C.		Iritis and phlyc. conj.
10	3	M.	W.	Phlyc. conj. eczema nasalis	Bleph. marg.
11	14	F.	C.		
12	10	F.	C.		Phlyc. ker.
13	3	M.	W.		
14	47	F.	C.	Phlyc. conj	
15	5	F.	W.		Phlyc. conj. and bleph. marg.
16	55	F.	W.		Phlyc. conj.
17	17	F.	C.		
18	56	F.	C.	Phlyc. conj	
19	57	F.	W.		Phlyc. conj.
20	1	F.	W.	Bleph. marg. et ecz. nasalis.	
21	20	F.	C.		Phlyc. conj.
22	2	F.	W.	Eczema nasalis	
23	18	F.	C.	Phlyc. conj	Phlyc. conj.
24	3	M.	W.		Eczema nasalis.
25	2	M.	W.	Phlyc. conj. et bleph. marg.	
26	3	M.	W.		
27	16	F.	W.		Phlyc. ker.
28	27	F.	W.	Bleph. marg	Bleph. marg.
29	10	F.	W.	Eczema nasalis	Phlyc. conj. and bleph. marg.
30	14	F.	C.	Phlyc. conj	
31	12	F.	W.		
32	9	F.	W.	Phlyc. conj	
33	8	M.	W.	Bleph. marg. ecz. cap. et Facialis.	Bleph. marg. eczema nasalis.
34	2	F.	C.	Phlyc. conj	
35	34	F.	C.		Phlyc. conj. (2)
36	12	F.	W.		Phlyc. ker. et conjunctivis.
37	29	F.	C.		
38	1	F.	W.		
39	5	M.	W.	Phlyc. conj	
40	20	M.	C.		
41	3	F.	W.		
42	35	M.	C.	Phlyc. conj	
43	30	F.	W.		
44	18	M.	W.		Phlyc. conj. et eczema nasalis.

There are in this list 44 cases of phlyctenular keratitis. In 12 of these cases phlyctenular conjunctivitis coexisted at the time of registration. In of the cases phlyctenular conjunctivitis subsequent appeared at varying periods of two to twenty-seven months from the date of the first attack. In but these people did keratitis reappear. In 5 eczema nasalis was present as a complication at the beginning. In 2 other cases it appeared subsequent In 5 persons blepharitis marginalis was present as complication in the beginning. In 3 other persons blepharitis marginalis occurred subsequently. In case iritis, with phlyctenular conjunctivitis, appeared twenty-one months after the phlyctenular keratitis In the whole 44 persons not one received any local treatment, whatever, during the continuance of the phlyctenular keratitis. The greatest period of treatment extended through three weeks; the shortest period five days. In every case bichlorid of mercury and sulphate of quinin were relied upon, with such additions as were suggested by complicating states of the patient's general health, constipation being overcome by saline aperients, and by regulation of the diet and habits of the patient. Those cases amenable to discipline, and which could be traced after a lapse of three years' time, are alone included in the table. Happily there are no more than three in the list of a thousand persons which had to be eliminated from Dr. Bullington's record.

Under the head of recurrent conditions, will be found diagnosis in each case, on subsequent return to the clinic after recovery from the first attack. In every case lymphatic engorgement, or other manifestations of the strumous diathesis were present. Blepharospasm and photophobia were often relieved by a single dose of Rochelle Salts or an antiperiodic dose of sulphate of quinin. A child of from seven to fourteen years of age, after an aperient, may take a single dose of 10 grains of sulphate of quinin, with marked amelioration of the condition of the eye. The subsequent treatment should include both mercury and sulphate of quinin, in minute doses. For a child under ten years of age, 1/10 gr. of sulphate of quinin and 1/50 gr. of bichlorid of mercury may be given together every hour, every two hours, or every three hours, according to the intensity of the blepharospasm and photophobia. Above ten years of age, gr. of sulphate of quinin should be given with 1/ gr. of bichlorid of mercury, every hour, every two hours, or every three hours, according to the urgency of the symptoms.

Eczematous eruptions of the face and scalp yield readily to the application of ammoniated mercury. Similar eruptions in the anterior nares are relieved by a mixture of yellow oxid of mercury ointment and liquid pitch; whilst mucopurulent inflammation of the Schneiderian membrane demand the use of sprays, the best of which contain bichlorid of mercury, and chlorid of sodium. Where a tendency to inspissation of accumulating matters in the nasal passages exists, a powder composed of borate of sodium ½ ounce, chlorid of sodium 10 gr., camphor 15 grains may be advantageously employed as snuff frequently during the day. Children under 12 years of age, however, are not likely to use the snuff; in such cases an aqueous spray of borate of sodium 2 drachms, chlorid of sodium ½ drachm, distilled water 8 ounces, camphor water and mint water, each ounces, carbolic acid in crystals 4 grains. This mix

are makes a most agreeable spray, and is valuable not only as a cleansing fluid, but is soothing and agreeable to the sensibilities of the patient, and the child which at first rebels at the spray, will usually in a day or two, not only yield without contest, but often seek the application.

To sum up, I wish to say that Horner's notion of the relations existing between eczematous eruptions of the skin and anterior nares to the phlyctenular diseases of childhood is not always apparent, but nearly constant. The conditions which predispose to these local disturbances are essentially constitutional, and no local treatment is, in any large proportion of cases, to be regarded with favor. Per contra, constitutional measures are of the first importance, and may alone be relied upon, even in complicated cases, so far as the eye is concerned as a participating organ.

DISCUSSION.

Dr. C. R. HOLMES, Cincinnati—I am very glad to have heard this most excellent paper. We all know that unless we treat this class of cases as Dr. Reynolds has outlined it, the results are not very satisfactory. We have all of us had cases come from very good men who treated them without any results because they neglected the nose and the constitutional symptoms and relied too much upon local treatment. I have been following for several years the same routine treatment, though using perhaps a little more local treatment than Dr. Reynolds called attention to, and I also like to use in this class of cases a weak solution of eserin, with cocain. I do not use atropia except in rare cases. I use eserin, $\frac{1}{10}$ of a grain to ½ ounce, and a 2 per cent. solution of cocain, having it instilled into the eye two or three minutes before the salve is applied, because the cocain will enable the parents to put the salve in better than they could otherwise do.

Dr. J. L. THOMPSON, Indianapolis—This paper is much more valuable than a consideration of 500 cases of cataract operation. In our section of the country we have phlyctenular keratitis from spring until late October. This is especially so with children, and I find that constitutional treatment is above all others. If the patient can stand it I have them change climate, make a trip to Bayview or Petoskey. It is astonishing, also, how a change of diet helps. With a correction of diet, and after three or four days of a changed climate they report favorably, while if compelled to keep them in Indianapolis they hang on for a long time.

Dr. T. A. GRIGG, Butte—Do you ever notice that these elevated spots on the eye sometimes break down to form ulcers?

Dr. THOMPSON—Yes, frequently, and if they stay in a hot climate they will persist for a long time.

Dr. BOYD—We have with us a great deal of this disease, and I want to say one thing in the line of treatment. We are always compelled to use quinin. I think we always have in these cases some malaria, and quinin and arsenic should be used in the treatment. I should think the use of eserin or atropin would depend upon the location of the phlyctenular. We ought to be very careful as to the use of cocain in our treatment and if used it should be in very small doses.

Dr. E. C. ELLETT, Memphis—I come from a district that is very malarious, being low and damp, and I would not give much for anybody's diagnosis of a malarial condition unless it is confirmed by an examination of the blood. While we give small doses of quinin, it is done as a tonic, and I should like to know whether or not these gentlemen have verified their diagnosis of malaria by examination of the blood and, if so, what form of the organism they found. Dr. Ziegler once said before this section, "No tea, coffee, cakes or candy," and that comes mighty near covering the things in diet that should not be allowed.

I do not see many cases of phlyctenular keratitis or conjunctivitis that run a course of three or four weeks, most of them being over in one week. With regulation of the diet, attention to constitutional treatment and the local use of the yellow oxid ointment they get along very nicely. I have seen a great many cases of this trouble among negroes we can not send to another climate. Those practicing ophthalmology in the south know that corneal troubles are particularly common among this race, and this disease is especially common among negro children.

Dr. LEARTUS CONNOR, Detroit—As bearing upon the remarks of Dr. Thompson it occurs to me to report that in Detroit we have very few cases of phlyctenular disease and very many less since our Island Park was opened some seventeen years ago. It is an island of 700 acres in the center of the Detroit River, and children of families in moderate circumstances are taken there in large numbers and very frequently. It is for them a Petoskey or Bayview. A point that occurs to me is that the keeping of those children out of doors as much as possible has aided materially in their improvement, and another observation along the same line is that in our children's hospital, which is one of the most perfectly lighted and ventilated buildings that I know of, the children recover from this affection in a very small fraction of time compared to what the same case would do in the private home. There the children are so cared for as to be made happy, whereas in most of the homes they come from the mental depression produced by the surroundings is disturbing to the reparative process.

Concerning the local treatment, while in former years I used eserin and am not entirely opposed to it now, I find that the use of atropin seems to be more satisfactory in allaying the pain and irritation, so I have almost stopped the use of eserin and cocain.

If we could make the conditions of child-growth anything like what they ought to be these cases would not occur.

Dr. H. B. YOUNG, Burlington—I agree with what Dr. Connor has said and with what others have said concerning the constitutional treatment, but we should not overlook the blood making qualities of small doses of calomel. I have found more benefit from the use of this drug in small doses than from any other treatment. Of course, properly speaking, mercury is not a blood maker, but in these cases we have a condition of malnutrition, with poor digestion, and the intestinal secretions are interfered with in some way or other, so that small doses of calomel, avoiding the cathartic effect, bring about rapid improvement.

As to the use of the yellow oxid ointment most of your prescriptions bring forth a preparation that ought never to be put between the patient's eyelids, and it is due to the imperfect method of making it. I usually prepare mine myself. I take the yellow oxid, put it on a slab with my menstrum, white vaselin, and mix them, rubbing it and rubbing it with a spatula, always allowing the spatula to clean itself by continued rubbing, and I get a smooth preparation.

Dr. MELVILLE BLACK, Denver—We do not see many cases of phlyctenular keratitis in Denver, but we are not free from it. One thing I have noticed is, if pains be taken to trace the cause, that these children are universally spoiled and have been allowed to take anything they pleased to eat and to drink coffee and tea at a very early age. I believe that bad feeding is responsible for nearly all the cases we see.

I want to call attention to a very nice base for the yellow oxid ointment, known as cold cream or rose water ointment. It is, as you know, an emulsion of white wax and rose water with a small amount of oil. It is better than vaselin alone because it mixes more readily with the tears and does not flow out of the conjunctival sac. It is harder and does not melt in summer as does vaselin.

Dr. J. L. HIERS, Savannah—I listened to Dr. Reynolds'

paper with interest because I come from a malarious district where we have a great deal of such troubles, and I heartily indorse the constitutional treatment outlined, but I would like to add something to the local treatment. It is my custom to give the yellow oxid of mercury ointment before the phlyctenular breaks, but after it breaks down I treat the ulcer with iodin. My mode of application is to cocainize the eye thoroughly, scrape the ulcer with a spud and apply the iodin on a small cotton tipped probe. After this I wash the eye with saturated solution of boracic acid and to overcome the reaction as much as possible and set the eye at rest, a good sized pledget of cotton is saturated with this solution and applied to the eye with a bandage. The eye is kept closed for from six to twelve hours and I rarely find it necessary to use atropin. My first experience with iodin in the treatment of corneal ulcers occurred about three years ago and I find that it seems to destroy the germs and convert the ulcer into a healthy wound.

Dr. FLAVEL B. TIFFANY, Kansas City—I have had a great many cases of phlyctenular keratitis in my practice. I very rarely go to my clinic without finding one or two cases of this disease. I have never regarded these cases as being of a malarious nature, but rather as being strumous. You always find them among the poorer class of people and often in the offspring of syphilitic parents. I never use quinin in the treatment of these cases, nor do I think as a rule it is indicated. Phlyctenular keratitis is not ulceration of the cornea, it is papule not pustule. The phlycten contains a fluid and that fluid probably contains a specific bacteria, I believe it is claimed by some that they have found the specific germ. Mercury not only acts mechanically in rupturing the phlycten, but it acts further as a germicide. I also use atropin and cocain but as systemic treatment I rely almost entirely upon the syrup ferri iodidi, with cleanliness, good food and good air.

Dr. R. F. LEMOND, Denver—Dr. Reynolds was my first teacher on the eye and I always love to hear him talk for he always means something.

I believe that this trouble is due very largely to malnutrition and lymphatic engorgement. Invariably they occur in children whose parents are not strong and I think it would be irrational to treat these conditions without resorting to constitutional remedies. I practiced medicine in Texas a good while and saw much of this trouble there. I found the children suffering with general engorgement of the whole lymphatic system and if that is corrected by small doses of calomel and they then be put on a good tonic like iron, quinia and strychnia, the phlyctenular trouble soon disappears. For local treatment I prefer a wash of 1 to 15,000 or 1 to 20,000 bichlorid, to be followed by a saturated solution of boracic acid. If the phlycten is trying to mature into an ulcer I use atropia unless I see some chance of cyclitic engorgement. Eserin often acts nicely in these cases where there is much photobia.

Dr. J. O. MCREYNOLDS, Dallas, Texas—It seems to me the discussion has taken a turn that is exceedingly important, and I feel that I ought to emphasize the remarks made particularly by Drs. Thompson and Conner regarding the sanitary condition of the patients. My own experience has been that we have only a little phlyctenular trouble in Dallas, and when we do have it I seldom see a case that is obstinate. I have noticed that there was a marked contrast with the large amount of phlyctenular troubles in other cities, and I attributed it to the fact that we have a salubrious climate where the children live out of doors a great deal. All of the recognized forms of treatment, it seems to me, are entirely satisfactory in Dallas, for the cases generally get well in a few days with different forms of treatment.

Dr. J. E. MINNEY, Topeka—I thank Dr. Reynolds for this practical subject. It is almost invariably our practice to give 1 grain of calomel in ten tablets, one of these to be taken ev hour, and in addition we dust the phlycten with the mild ch rid and it disappears like snow before the morning sun. R specting the blood-making power of calomel, I think it has be pretty well demonstrated that in 1/10 grain doses, given thr times a day, it will increase the red blood corpuscles.

I am very much pleased to learn how to make the yellow ox ointment. We have in Topeka a hundred druggists, and pe haps three or four make it properly.

Dr. W. C. BANE, Denver—It is my habit to order the oxid mercury rubbed up with a drop or two of olive oil, then wi lanolin or vaselin.

Dr. C. E. NORTON, Lewiston, Maine—In our country we ha no malaria, so that can not be a cause for our phlyctenul keratitis. We use quinin in the State of Maine only as a toni unless our patients have come there from a malarious regio The majority of the cases I have had occurred among the po est children in town, who did not have proper nutrition. Th question of what should not be given has been brought up, bu nothing was said about the kind of food the children shou take. One of my instructors, Dr. C. R. Agnew, used to pr scribe the food the children might take, and it consisted bread and milk.

As to bandaging the eye, it seems to me that is bad trea ment. I am careful to do all I can to get the children to op the eyes, and for this reason I believe that cocain is of sufficie benefit to counterbalance its destructive influence upon th cornea.

Dr. R. L. RANDOLPH, Baltimore, Md.—In all forms of ker titis, especially the phlyctenular variety, we have irritati symptoms. In phlyctenular keratitis we have exposure an inflammation of the nerve endings and as a consequence spasm of the accommodation and contracted pupil. It would see that eserin in such cases would only intensify this condition Complete rest of the accommodation and removal of the irrita tive symptoms is demanded, an end which is best obtaine through atropin. The more he employs eserin the more he convinced of its very limited usefulness outside of its value glaucoma.

Dr. REYNOLDS—I am very much complimented by the cha acter as well as the amount of the discussion. In a bri paper a man can not bring out all the points he might conside essential. I am so well known as a crank on the subject foods and digestion that I refrained from mentioning muc that I perhaps should have said on this subject. I believe, Dr. Norton said, that when we have to deal with a case that badly fed and wants to eat sweet things, which I always fo bid, that a diet of bread and milk is best for the child. I fre quently prescribe alternate cupfuls of malted milk and bee tea, and I prefer the Armour extract of beef because I find of uniform quality and reliable strength. I am one of the fe that believe in beef tea for its nutritive value and do not co sider it as merely a stimulant. I insist that the child shou have plenty of pure water and fresh air and if it buries head in the pillow it is all the more reason why it should taken out of doors. I give the mercury, not because it make blood, for I know it does not, but because it relieves th engorged glands, and I use quinin, not because of any malari condition, but because it is a reliable stimulant of the emun tory organs. It is more reliable and less debilitating than a other sudorific and diaphoretic known to me.

Adenoid Vegetations.—G. Zimmermann attributes the etiolog of recurring pseudo-croup to adenoid vegetations, and state that in his experience, extirpation always cures the croup . . . Bilhaut also emphasizes the frequency of curvatur of the spine, scoliosis, kyphosis and lordosis in children affecte with adenoid vegetations, and has observed all these troubl vanish after their removal. He claims that this should alway be the first step in the treatment of any defective developmen of the spine or thorax. . . . Lauffs has also recently re ported the cure of a distressing case of prolapsus ani in a bo of five, cured by removal of his adenoid vegetations.—*Munch. Med. Woch.*, July 12 and 18, and *Vienna klin. Woch.*, July 14

THE USE OF FORMALIN IN THE TREATMENT OF BLEPHARITIS.

Presented to the Section on Ophthalmology at the Forty-ninth Annual Meeting of the American Medical Association held at Denver, Colo., June 7-10, 1898.

BY H. MOULTON, M.D.

FORT SMITH, ARK.

During the past year I have employed formalin in all cases of blepharitis. To apply it I use a toothpick with a small cotton mop wrapped on the tip so that it does not take up enough solution to run into the conjunctiva. The solution is made of the strength of .2 per cent. to 1 per cent., beginning with the weaker. It must be frequently renewed or prepared extemporaneously at the time of using, in order to insure uniformity of strength.

The lid is drawn away from the eye-ball. The mop dipped in the solution is rubbed gently along the margin among the lashes until all the scales and crusts are removed and until the surface of any little pustule is rubbed off. The site of disease is thus left clean and smooth. The mop is renewed a time or two during each operation. A little bland oil may be applied afterward, or the formalin may be used in the oil. The applications are made daily if possible by the physician's hands. Otherwise they may be made by the patient at his home.

The correction of all retractive errors I hold to be of prime importance; likewise the improvement of local or general conditions which may predispose the margins of the lids to disease. With these precautions taken, it is gratifying to note how rapidly patients will improve under formalin treatment. It will invariably improve all cases and cure many of them. Some of those cured will relapse, but a renewal of treatment again relieves them. Several of my cases had been treated by myself by other means with little or no benefit, but improved rapidly under formalin.

One, a school girl, had been under observation for six years. She had been treated for two months by an eminent man in St. Louis, and for various periods by myself with the full catalogue of salves and solutions, without result. In one month under formalin the edges of the lids were smooth and white, and have remained so for four months, though the girl continued at school.

Another case was that of a young lady whose blepharitis had produced a trichiasis, requiring the Arlt operation for its relief, the blepharitis having been previously cured with formalin. From January to the present writing her lids have remained well. Other agents than formalin had proven valueless.

A clergyman, aged 27, had worn glasses and been treated for many years for blepharitis without a month's relief. A month's use of formalin left his lid margins healthy. They remained so from July, '97, till April, 1898, when with over-use of the eyes he suffered a relapse, which again yielded promptly to formalin.

Some cases do not seem to get entirely well for longer than a few days, but the use of the formalin is so effective in keeping the disease in check that such patients are glad to keep up its use by their own hand. I do not wish to say that I have not found benefit in many cases from the use of other drugs, or that formalin is a permanent cure, but the proportion of cases benefited and the measure of relief afforded by this remedy is so vastly superior in my hands to other remedies, that I cannot do otherwise than call attention to it.

521 Halliwell Building.

AN UNUSUAL CASE OF RUPTURED TUBAL PREGNANCY; OPERATION AND RECOVERY.

Presented to the Section on Obstetrics and Diseases of Women, at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7-10, 1898.

BY J. E. COWLES, M.D.

LOS ANGELES, CAL.

This case of tubal pregnancy is worthy of record on several accounts: First, because of its early rupture, being but about four weeks advanced in pregnancy; second, because of recovery from such a dangerous state of collapse as occurred during the operation; and third, on account of the severe complication—left lobar pneumonia—which set in on the second day after the operation, and would seem to have barred what little chance of recovery was still left to the patient.

Mrs. M. L. J., American, age 30, married seven years, mother of two children, never had a miscarriage, abortion or any serious sickness before this, but was delicate in childhood. Began to menstruate at 15 years of age and first suffered severe pain with her periods at 17, which continued until after the birth of her first child, when the pain lessened in duration and severity, lasting only during the first day, where previously it had continued two or three days. Has always been fairly regular, but on several occasions went over a week, and once last winter ten days. Her last period, before this accident, began on January 20 and continued for a week as usual. During February she felt well, no nausea or other symptoms of pregnancy being noticed, except swelling and tenderness of the breasts, which always occurred as her menstrual period approached, and consequently did not impress her as auguring anything unusual. On March 1, 1898, at 10:30 A.M., while sweeping a room, she stooped, and while in that position was seized with a severe pain. I saw her at 2 P.M. and observed her ghastly pallor and look of distress; not a particle of color in cheeks or lips, pulse 110 and thready, respirations rapid and shallow, temperature subnormal, abdomen very tender and the patient evidently suffering exquisitely. I gave hypodermically a combination of atropia and morphia containing a quarter of a grain of the latter, and repeated the dose in half an hour, no relief having been experienced. This making the pain tolerable, I left 1/10 grain morphia to be given every hour until my return. I returned at 5:30 P.M. and gave another 1/4 grain dose of morphia hypodermically, the pain continuing atrociously severe, being steady rather than of a spasmodic character. Bimanual examination revealed nothing of a positive nature. Being satisfied that a severe hemorrhage had taken place, thinking that it came from a ruptured tube, counsel agreeing with me, I proposed operation for an early hour next morning, but the patient declined, until her mother could arrive that night. Accordingly, at 8 o'clock the following morning, a celiotomy was done in the patient's bedroom, with the best antiseptic precautions available, but with the dangers and difficulties usually attending operations in private apartments, not the least of which, from the patient's standpoint, was a cold room.

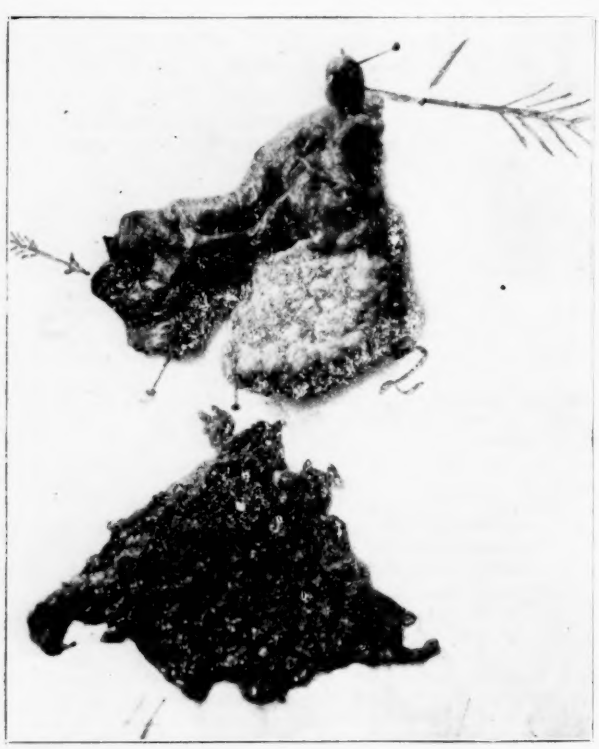
The recorded temperature of patient at 6 A.M. was 99.8 degrees F., with pulse at 118, small and thready, although fortified beforehand with strychnia and digitalis.

Patient being etherized, I made a three-inch incision in linea alba just above the pubes. On reaching the peritoneum, it pouted into wound and showed dark underneath. On opening it, dark blood squirted upward several feet. A quart or more of liquid and clotted blood was removed and a rupture in the right tube, close to uterus, was discovered. After tying off tube and ovary on right side, the left was brought up, examined, found healthy and dropped, and the toilet of peritoneum about completed, when considerable oozing of blood, from stump and broad ligament, was noticed. Great difficulty was experienced in controlling it, final resort being had to the cobbler stitch with catgut. Abdomen was closed without drainage, the peritoneal cavity having been filled with hot

normal salt solution. When the operation was completed, the patient was in extremis, with a pulse of about 180 and almost imperceptible at wrist.

By the aid of hypodermics of strychnia, atropia, digitalin and nitroglycerin given to the limit of safety and enemas of hot salt solution, coffee, whisky and aromatic spirits of ammonia, the patient reacted and at 6 P.M. exhibited a pulse of 138, of fair tone and volume and a temperature of 100½ degrees F., respirations 30. March 4, 6 A.M. (next morning), pulse 120, temperature 100½, respirations 30; March 4, noon, pulse 122, temperature 101½, respirations 30; March 4, 3 P.M., pulse 140, temperature 102⅕, respirations 32; March 4, 10:30 P.M., pulse 137, temperature 103⅕, respirations 36. (At this time the decidual membrane shown in the photograph appended was expelled from the vagina, no shreds or bloody discharge being noticed before.)

March 5, 6 A.M., pulse 136, temperature 102½, respirations 38 with some cough. Examination revealed crepitant râles at base and posterior part of left lung. From this date to the 14th as a complication of the already serious condition, there was a typic left lobar pneumonia, the pulse gradually coming down to 118, at which it stood on the latter date. After March 14 there was practical defervescence, with the patient rapidly improving in strength and looks. About this time



1. Fimbriated extremity of tube. 2. Ovary. 3. Point of rupture of tubal pregnancy. 4. Decidual membrane, surface of attachment to uterine wall.

every alternate suture was removed from the abdominal wound and the balance a week later. No suppuration or trouble of any kind occurred about wound or sutures, silkworm having been used externally and the patient was sitting up in three weeks from date of operation.

April 22 her period reappeared with the usual pain and lasted a week. May 7 inspection of the abdomen revealed a firm scar, two and three-fourth inches in middle line just above pubes and natural contour of the abdomen. Bimanual examination shows uterus of normal size, slightly anteflexed and freely movable *without pain*. May 23 began a repetition of pain and period with usual length of flow. The specimens being hardened in formalin solution, were submitted to Dr. Stanley Black, pathologist, to whom I am indebted for a careful examination, and who reported the following: I have examined the specimens, find chorionic villi in the Fallopian tube and decidual cells in the membrane.

I append a photograph showing the specimen before mutilation. No 1 points to the fimbriated extremity of the tube. No. 2 is the ovary, apparently normal in every way. No. 3 indicates the point of rupture; and just above No. 4 is seen the decidual membrane, presenting its shaggy surface of attachment to the uterine walls.

If I may be allowed a few observations in regard to this case, I will recall to your attention the fact that from the last day of menstruation, January 27, to March 1, the day of rupture, is but twenty-nine days. From quite a search of the literature of these early cases, I have been unable to find a case of so early rupture as this, though I doubt not for an instant they may have occurred even earlier. One of the earliest cases that I have run across is one of five weeks reported by Tait, in which death occurred in seven and one-half hours from hemorrhage, the rupture, as stated by him, from which the fatal hemorrhage took place not being larger than a pea. As diagnosis and treatment are the most important considerations in all pathologic conditions, they are practically the only ones in this class of cases. If one waits for a classic array of symptoms and refuses to operate until such an array is present it is my opinion that the patient is to be commiserated on account of her too conservative (?) medical attendant. Dr. Henrotin says: "The diagnosis of primary complete rupture prior to the seventh week is the diagnosis of intra-abdominal hemorrhage."

Given a woman just previously in a state of health within the child-bearing period, with the physical signs of internal hemorrhage and the characteristic pains, if she be conscious, even though no coincident signs of pregnancy exist, I maintain that the medical attendant is not only justified in, but criminally negligent if he refrains from, operating (*i. e.*, making an exploratory laparotomy), thus increasing the woman's chances of recovery and demonstrating true conservatism, the conservation of life, always premising a fair degree of skill in the operator and a strict adherence to the details of asepsis and antisepsis. Dr. E. S. Boland of Boston in an excellent article on this subject "from the standpoint of the general practitioner," courageously remarks, "although I have never performed a laparotomy, I should not hesitate to attempt it if I met one of these cases so remote as to require many hours to get greater skill," and concludes, "that prompt laparotomy after rupture is the only safe and conservative course." I think in a case such as the one reported, where the time on the operating table should be as short as possible, that it would be better to quickly remove the hematoma and bring together healthy surfaces with continuous catgut sutures, not removing tube and ovary if not otherwise diseased, and thus save an amount of added shock that might prove fatal. It goes without saying, that the interests of such cases as this are better conserved in a hospital or sanitarium, for I am sure that the pneumonia here reported resulted from the too cool rooms, and the danger of transportation thither will no doubt be doubly compensated to the patient by the better operating facilities and comforts there to be had.

As to the frequency of these cases compared with those of natural pregnancy there can only be surmise. One author reports from his own experience 1 in 170 cases of normal pregnancies, while another reports 1 in 1500 cases. Again, as to which tube is most frequently impregnated, that is, I dare say, purely a matter of accident, but I have noted in my search for these cases that it has most frequently occurred on the right side, and merely record the fact without attaching significance to it. When we consider the large mortality of these cases if left to nature or medication (see Baldy's report of Formad's autopsies) and the brilliant results obtained by the early opera-

n, we are constrained to recommend the rule: hen in honest doubt, operate. In a letter dated pril 22, 1898, Dr. M. D. Mann of Buffalo, N. Y., ites me: "I have operated forty or fifty times for at condition, four times within the last three weeks, d so far all have recovered except one, which was erated on through the vagina." This brings up the estion as to the choice of route by which to reach e diseased condition. In *recent* cases my own oice is for the abdominal route, as giving one abso- te control over hemorrhage and enabling him to see l that is to be seen, and if vaginal drainage is desir- le it can be easily added.

THE INFLUENCE OF SEX ON DISEASE.

sented to the Section of Obstetrics and Diseases of Woman at the Forty-ninth Annual Meeting of the American Medical Association held at Denver, Colo., June 7-10, 1898.

BY LOUIS FAUGÈRES BISHOP, M.A., M.D.
NEW YORK.

Curiously enough, while the tendency in modern vilization is to eliminate the distinctions in the polit- al and economic status of men and women, that of edicine has been to exaggerate the natural difference the manifestation of disease between the sexes.

The object of this essay is not so much to show w many as how few are the differences. The influ- ce of sex on the course of general disease is wholly matter of soil and environment; that is, the disease the same, with the same tendencies and possible rminations, but modified by the constitution of the rson and not by sex. Granted that individual con- itution does affect the course of disease, we must termine whether its characteristics differ accord- g to sex, or whether they differ among individuals gardless of sex. To predict our conclusions it will found that the course of general diseases is not fected materially by difference of sex, except in a w instances that are easily defined and pointed out. part from variety of occupation and greater or less posure there are few factors which alter the per- ntage of men and women who acquire infectious seases. Typhoid, typhus and the exanthemata affect e sexes equally.

Mortality is indeed greater among males when pneu- onia is considered, but that is undoubtedly due to e greater abuse of stimulants by men. In diseases the nervous system the effect of sex upon the form disease is more marked. Men are more liable to e structural diseases, especially sclerosis, while omen are more liable to functional disease. As nota- e as any is the predominance of Graves' disease ong women. Especially is this marked when we clude in Graves' disease many cases of tachycardia, which the eye and thyroid symptoms are not arkedly developed. The inference is therefore jus- fied that, barring pelvic disease due to organs belong- g exclusively to women, and those nervous diseases ceable to the acknowledged greater instability of r nervous system, the manifestation of disease in man does not differ markedly from that seen in n under similar circumstances. Nor can it be said at the influence of the pelvic organs in one sex has much greater tendency to reflex manifestation in stant organs than those of the other.

The influence of sex on disease as depending chiefly on habits of life is well illustrated in the case of rdiac lesions. The quieter life eliminates much of e danger of strain. In women, who, as a class, do not abuse alcohol, there is less tendency to arterial disease, and to all those symptoms that follow arterial sclerosis. In old age the factor of arterial degenera- tion is apt to be less marked. In young women, the tendency of the sex to chlorosis should influence diag- nosis, prognosis and treatment of patients presenting cardiac and pulmonary or nephritis symptoms. Thus in a young man, dropsy of the feet would be more readily thought to be of kidney origin than in a young woman.

The tendency to specialism is to treat the male and female as separate species. This is so grave an error that it has seemed worth while to point out that men and women have most points of physical constitution in common; with only those modifications necessary to distinguish sexual function. The diseases of in- fancy are exactly the same in both cases; the cardiac, pulmonary, renal, gastric and most general diseases are the same. Nervous diseases are indeed modified by a higher degree of direct and reflex excitability of the nervous system, but rarely by any disease of the uterus or ovaries. Indeed, the belief is well founded that neurasthenia and hysteria are often aggravated by local therapeutics directed to their cure.

It can be stated on the authority of nearly all those competent to study epilepsy from the neurologist's point of view, that this disease is hardly ever cured by operation. The uterine and ovarian element in the general diseases of women is largely, at the present time, the unnatural growth of distorted public opinion, that has been led to attribute many conditions to local diseases of women, that are, in fact, common to both sexes, or at least only modified by the natural difference in general physique and nervous organiza- tion. The fact that women are more liable to func- tional nervous disease is not due to disease of the pelvic organs, but easily and wholly traceable to the physiologic difference of the general nervous system. So the appreciation of the difference in the course of disease in individuals, of whatever sex, need only be modified, as it always is by the variation of constitu- tion, whether between one man or another, or one woman and another, or between a man and a woman. A woman leading a healthful outdoor life, with her muscles in use and her muscular tissue thoroughly active in its oxygen-absorbing and heat-producing functions, is more of a man in one sense of the word than the confined, undeveloped and anemic city clerk. This difference in physical stamina between the sexes is not due to the influence of any set of organs, nor is it to be modified by any degree of health of these organs that can be attained independently of the rest of the body. What small difference there is in dis- ease is due to the minor difference in nervous irrita- bility, but far more to the influence of habits of daily life.

The influence of sex upon the course of internal disease is not, therefore, to any great degree influ- enced by sex, as such, but by the influence on dis- ease of those external conditions which are common to both sexes, but which by custom may have come to predominate in one sex or the other. Thus a woman is more protected from violent accidents, exposure to the weather, and suffers less frequently from the results of alcohol, tobacco and some of the infections. On the other hand, she is more liable to the evils of a sedentary and confined occupation, and the abuse of tea and sweets is much more frequent. These circumstances are not necessarily the accom-

paniments of sex, because they are reversed in a great many individual cases.

In the same way with character. The female character and the male character, as composites of persons grouped by sexes are undoubtedly different, yet it is not a question of sex but of character. So the course of disease in individuals is a question of constitution, not of sex.

In therapeutics it will be those measures that most tend to overcome the deficiency of general vitality manifested in the circulation, nutrition and blood formation of women that will be most successful in removing the symptoms now so often referred to a trivial local disease that frequently, in itself, requires but little treatment. The result of an impartial consideration of this topic leads inevitably to the conclusion that the influence of sex upon disease has been exaggerated, and that the great fundamental principles of physiology and medicine are the true supports of sound therapeutics in childhood and in old age, in men and in women.

30 West Thirty-Sixth Street.

FALSE LABOR PAINS.

Presented to the Section on Obstetrics and Diseases of Woman at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo, June 7-10, 1898.

BY T. MITCHELL BURNS, M.D.

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DENVER, COLO.

As I believe there are important points in the diagnosis and treatment of false labor pains which are not mentioned by the majority of obstetric text-books, I desire to present this minor subject and obtain your opinions. As we are called to our dispensary cases as soon as the pains occur every ten minutes, we have seen a proportionately large number of patients suffering from false labor pains. At times calls to such cases have been nearly as frequent as to real labor.

Synonyms.—Premonitory pains, dolores presagientes, and, if you will allow me, threatening premature labor.

Definition.—False labor pains are pains which simulate true labor pains but are not at the beginning the result of compression or tearing of the nerves of the birth canal.

Time.—Generally in the last weeks of pregnancy, but they may occur any time during pregnancy or even in the non-pregnant to a less extent. The pains frequently accompany sinking of the uterus or occur at the time for a menstrual period.

Causes.—Originally the cause is generally intestinal colic or some reflex local or peripheral disturbance. Toothache is a peripheral disturbance that may result even in labor. Rheumatism of the uterus, irregular contractions of the abdominal or uterine muscles, are given as causes. In fact, any of the causes of abortion may produce false labor pains.

Synonyms and diagnosis.—It is said that none of the premonitory symptoms of labor are present. Sinking of the uterus and other premonitory symptoms are often present. A great majority of writers state that in a case of false labor pains the pains are irregular, do not occur at the same time as the painful uterine contractions of pregnancy, that the pains are felt all over the abdomen and do not progressively increase as do labor pains, and that they do not dilate the cervix. Now, this may be true at the onset, but sooner or later the pains may be only in the back or groins, occur regularly, be as severe as labor pains and often accompanied by painful uterine contractions which may cause from one to three fingers' dilatation of the cervix.

These uterine contractions are, however, generally only progressive for a time and disappear when the cause is removed. It is sometimes impossible to differentiate them from true labor pains without waiting an hour or two to note the progress of the dilation of the cervix or the effects of the therapeutic test. To determine if the uterus contracts at the same time as the pain, the text-books say to place the hands very gently to the fundus, but it may be necessary to feel the lower uterine segment per vagina to exclude the possible contraction of the abdominal muscles. The symptoms of threatening premature labor are identical with those of false pains when painful uterine contractions are present. A painless uterine contraction may occur at the same time as the colicky pain in the intestines. The irritation caused by the colic may bring on uterine contraction, at first painless, later painful. Effacement and one to two fingers' dilatation of the cervix may occur in multiparæ, with lacerated cervices from relaxation, independent at least of painful uterine contractions.

Prognosis.—The pains generally disappear rapidly if the cause be removed. Rarely premature labor follows. Some cases of tedious labor supposed to be at term and lasting two or three days are probably due originally to the irritation of false labor pains which have produced enough irritation to excite a little premature true labor pains, and finally expulsion of the uterine contents. When the false pains have excited threatening premature labor pains and some dilation of the cervix, labor at term is frequently easier as a consequence.

Treatment.—As soon as false labor pains are suspected a four-quart enema should be given at once and then a fourth of a grain of morphin hypodermically. The morphin may be repeated by the mouth in an hour or two if the pain lessens but does not disappear. Nothing stops the pain so rapidly as an enema. Do not think of cathartics. They take too much time and may increase the irritation. In some cases it is impossible to stop the colic until after hot drinks, as ginger and peppermint, or inhalations of chloroform, and even hot fomentations and flaxseed meal poultices have been used.

ILLUSTRATIVE CASES.

Case 1.—Sinking of uterus and dilation of cervix to three fingers. Physician remained all night because previous labor had only two or three hours' duration. Just three weeks later patient confined, labor lasting only about two hours.

Case 2.—Very severe bearing-down pains, regular in frequency and severity; no dilation of cervix. About one week later patient confined; pain not nearly so severe and bearing-down efforts less.

Case 3.—Patient eight months pregnant, severe toothache last two weeks, last twelve hours labor pains, cervix dilated two fingers. Morphin and chloroform given and tooth extracted. The cervix closed. Confinement one month later.

Case 4.—Cervix dilated three fingers, previous slight pains absent. One week later patient delivered after a few pains.

Case 5.—Severe colic, no dilation or painful uterine contractions; enema, morphin, hot fomentations, flaxseed meal poultice and finally chloroform for over two hours before colic under control.

Case 6.—Colic; enema and morphin not effective. A teaspoonful each of tincture of peppermint and ginger in half a cup of sweetened hot water relieved.

Case 7.—Patient examined at about the eighth month to see if placenta previa was present. (Placenta previa complicated her last labor.) Bag of waters found projecting through the effaced cervix dilated to two fingers.

COLPOPERINEORRHAPHY AND THE STRUCTURES INVOLVED.

DEDICATED TO DR. THOMAS ADDIS EMMET AND MR. LAWSON TAIT, IN RECOGNITION OF THEIR LABORS IN THE SURGERY OF THE PERINEUM.

BY BYRON ROBINSON, B.S., M.D.

Professor in the Chicago Post-Graduate School of Gynecology and Abdominal Surgery; Professor of Gynecology and Abdominal Surgery in Illinois Medical College; Professor of Gynecology and Abdominal Surgery in Harvey Medical College; Gynecologist to St. Anthony's Hospital; Consulting Surgeon to the Mary Thompson Hospital for Women and Children.

CHICAGO, ILL.

Continued from page 594.

The vaginal portion is endowed with considerable strength and it becomes blended with and is lost on the vaginal wall. The rectal portion of the levator ani fascia superior passes to the rectal wall, becoming continuous with the fibers and blending with it. There is a strong fillet passing between the rectal and vaginal canal. The part of this fascia which passes to the rectal wall, has been termed the ligament of the rectum. This fascia forms a strong support to the muscular wall of the rectum.

It is not an argument very rich in facts to say that the perineal body is to fill in the space in that region. It serves as an attachment for one end of the levator ani muscle. A subject which I have not found mentioned in the books is that in many parts the fascia of the pelvis consists of many distinctly defined layers, which can be cleaved from each other. For example, the fascia over the coccygeal muscle may be cleaved off in several layers, and the same may be said,—but not to such a degree—of the levator ani superior. Several thin, transparent planes of fascia may be cleaved off of the obturator fascia superior. Even the levator ani fascia inferior, which is very thin and compact, may be cleaved into two or more planes. The obturator fascia inferior is a very powerful fibrous plane of fascia and may be cleaved on each side into thin planes but the central plane is a thick, powerful, individual, somewhat coarse, fibrous membrane. The powerful obturator fascia inferior is cleaved, split, for the transmission of the pubic vessels and nerve. The canal formed by the separation is known as Alcock's canal. The several membranous planes of some of the fascia in the pelvis endow it with much more utility. One plane may tear without the other. Several cleavage planes are characteristic of fascia in other localties and are more capable of resisting trauma than a single plane.

The coccygeal muscle arises from the spine of the ischium and lesser sacrosciatic ligament, becoming inserted into the side of the coccyx and two lower sacral vertebræ. It is a flat musculo-tendinous triangular plane, aiding to close the posterior pelvic outlet. Its anterior border is in contact with the posterior border of the levator ani muscle, of which it is practically a continuation backward and covered by the same fascia, viz., the levator ani fascia superior. The posterior border bounds the anterior margin of the great sacrosciatic foramen. The lesser sacrosciatic ligament, which is formed by a degeneration of the superficial muscular fibers of the coccygeus, takes the place of the continuation of the levator ani fascia inferior. The coccygeus muscle is fading out of existence, belonging originally to a large tailed animal. The origin and insertion of the coccygeus muscle and lesser sacrosciatic ligament are identical. They are so strong that practically they never yield so as to be involved in colpoperineorrhaphy. However, the coccygeus muscle is described in order to show that its fascia should be named the coccygeal fascia, which can not admit of confusion. The inferior surface of the coccygeus muscle is doubly strengthened, not only by the lesser sacrosciatic ligament, but by the superior surface of the great sciatic ligament which represents the proximal tendon of the long head of the bicep femoris. The tendon of the long head of the biceps formed an attachment at the tuberosity of the ischium. The coccygeus fascia covers the coccygeus muscle and has an area of about $3\frac{1}{2}$ square inches on each side of the median line of the pelvis. The pyriformis muscle arises from the lateral portions of the second, third and fourth pieces of the sacrum, from the inferior border of the great sacrosciatic notch and from the great sacrosciatic ligament. It passes out of the pelvis through the great sacrosciatic foramen, becoming inserted into the upper border of the great trochanter. It is the most posterior muscle which aids in closing the pelvic outlet. It serves as a bed on which the sacral nerves may rest. It is covered by the pyriformis fascia, which is a continuation of the obturator fascia above and the coccygeus fascia anteriorly. After leaving the obturator and coccygeus fascia it rapidly thins out into a transparent thin membrane. It is perforated by the internal iliac vessels which leave the pelvis by the great sciatic foramen. The pyriformis fascia is attached to the surface of the sacrum internal to the origin of the pyriformis muscle from the posterior border of the coccygeus muscle to the ileopectineal line which passes along the border of the wing of the sacrum to the sacro-iliac joint and finally it is attached to the superior margin of the great sacrosciatic foramen from the ischial spine to the sacro-iliac point. The pyriformis fascia covers an area of about five square inches on each side of the pelvis. The sacrum is lined by a thin fibrous membrane which we will name the sacral fascia; hence, the internal pelvis is lined by the obturator fascia superior, the levator ani fascia superior, the coccygeal fascia, the pyriformis fascia, and the sacral fascia. This nomenclature we recommend as simple, and as facilitating the easy acquisition of the internal fasciæ of the pelvis.

The use of the levator ani fascia superior is: *a*, to sustain the pelvic viscera, and is analagous to the fascia tranversalis-abdominalis; *b*, to form a pouch on each side for the pelvic viscera, which assists in closing the pelvic outlet above the muscular floor; *c*, to fix the pelvic viscera; *d*, with its superior pad of fat and snow-white connective tissue, to support the pelvic peritoneum; *e*, to resist the pressure of the abdominal muscles and the diaphragm, and *f*, to serve the useful purpose of separating the perineal tissue from the peritoneum.

This latter anatomic condition limits inflammatory and infective processes from either perineal or peritoneal spaces. Further, the levator ani fascia superior forms the pelvic floor, and by its strength prevents pelvic hernia. The blood-vessels are placed superior and the nerves inferior. The levator ani fascia superior and inferior limits nearly all fistulæ in and to one-half inch above the anus. A disadvantage of the levator ani fascia superior is that it is perforated by nerves and vessels which carry sheaths of connective tissue; these sheaths allow infective pro-

esses to pass from the perineal tissue to the subperitoneal tissue and vice versa. Deficiencies occur in the fascia, excavations which are filled with fat. The fascia of the pyriform muscles consists of an extension backward of the obturator superior and levator ani fascia superior. Both fascial planes blend, the one from the anterior margin of the sacrosciatic foramen and the other from the posterior margin of the cocygeus into a thin membrane which covers the pyriformis muscle and the sacral plexus of nerves. The pyriformis fascia is perforated by the gluteal vessels and nerves to gain the gluteal region. This plane of fascia is so thin and delicate that one can scarcely dissect it without tearing it. The levator ani fascia inferior (anal or ischiorectal fascia) lies in immediate and intimate contact with the inferior surface of the levator ani muscle. This fascia begins at the white line and becomes lost on the rectal wall. It is very intimately connected with the muscles. The levator ani fascia superior and inferior blend with the rectal wall about one-half to three-fourths inch above the anus, and rectal perforations generally occur below the insertions of the above fascia. The fibers of this fascia

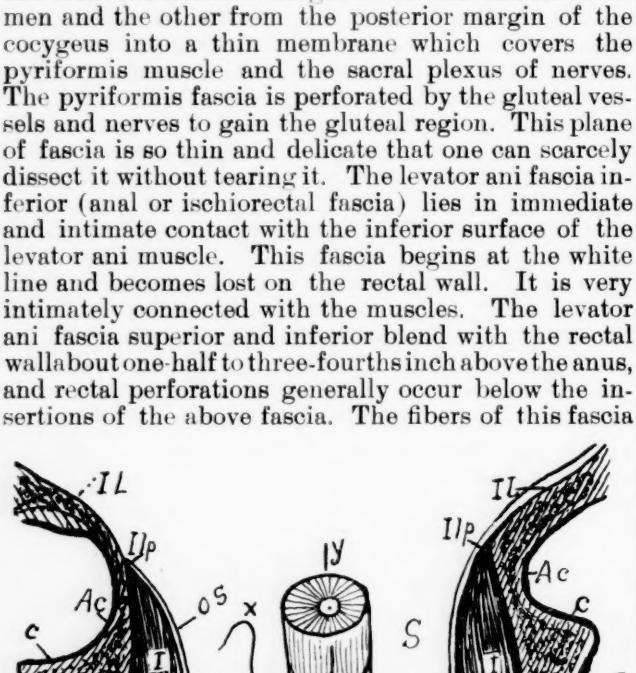

Fig. 9.—(Author.) An illustration to demonstrate that in deep lacerations of the pelvic floor the levator ani fascia superior and inferior is torn with its intervening muscle, the levator ani. The rent or tear is shown by R, R, and R, R, on the right side. The needle armed with the thread (X) will pass through the muscle and its two layers of fascia in order to restore the integrity of the pelvic floor. IL, iliac fascia; IIp, the beginning of the obturator fascia superior at the ischiopectineal line; OS, the obturator fascia superior; W, the white line; O, the obturator fascia inferior divided by the white line; I. O, the obturator internus muscle; F, the fat in the ischiorectal fascia; A, the levator ani fascia superior; B, the obturator fascia inferior; V, the vagina; S, intrapelvic space; Y, the cervix; P, deep transverse perineal muscle, and 2, the superficial; B, the sphincter ani externus; M, deep layer of triangular ligament; S, superficial; N, deep layer of superficial perineal fascia.

are included in all deep suturing of extensive colpoperineorrhaphy. By including its fibers in the sutures, the relations of the levator ani may be partially restored to the normal relations. The sacral and coccygeal fascia lines the anterior surface of the sacrum; it has localized thickenings and thinnings. The thickest portions are those located along the lateral margins of the sacrum and especially around the anterior sacral foramina. The triangular ligament (deep perineal fascia) closes in the pelvic floor in front. It is the result of the union of the obturator fascia extending from both sides toward the center. It is a prolongation of the obturator fascia across the pubis, and Winslow called it the ligamentum inte ossei pubis; Carcassone, the ligamentum perineal Colles, the ligamentum triangulare urethrae. It the deep blade of the fascia perinei and is an integ part of the obturator fascia. It is the middle fasc of the perineum, or Camper's ligament. It fills u the deficiency found between the anterior or pub insertions of the levator ani muscle. It is a wonde fully powerful structure in fixing the lower end of th vagina. It is stronger in males than in females. is the structure which retains, with powerful gri the anterior end of the vagina forward and upward The vagina pierces the triangular ligament who fibers fix themselves in and around the vaginal wall It joins posteriorly with the lower margin of the in ferior edge of the superficial perineal fascia. If on dissects away all structure from the vagina exce the triangular ligament it will become apparent once what a powerful support it is to the lower en of the vagina. The triangular ligament, as its nam implies, is triangular in shape, aponeurotic in stru ture, extending as a tense septum between the anteri part of the perineum and pelvis. It is attached o either side to the rami pubis and ischium. Its infe rior or posterior inferior margin is ill-defined, blend with the superficial perineal fascia at the ischioperi neal fascia, where it gradually loses itself on th lower surface of the levator ani muscle. It sustain and fixes the urethral canal. It is pierced by th vagina at its base or weakest portion. It serves th useful purpose of connecting the bladder and vagin to the pubis, and of retaining adjacent organs i fixed relations. By its connection with the ischio perineal ligament (fascia) and levator ani muscle i serves to strengthen the inferior region of the pelvi posteriorly, and aids to fortify the rectum with it muscles. By dissection, it is plain to see how th triangular ligament closes the anterior perineal tri angle, and the levator ani closes the posterior perinea triangle. The triangular ligament extends posteriorly on each side of the vagina and blends, not only wit the lower ledge of the superficial perineal fascia, bu very intimately interweaves and blends with th ischioperineal ligaments, making a powerful fixation for the vagina at its lower end. The triangular liga ment in conjunction with the ischioperineal liga ments lends to the perineal body a "Punctum Mobile." In perineorrhaphy much attention should be given t the factor of including considerable parts of the tri angular ligament and the ischioperineal ligaments i the deep suture, which secures a forward curve to th vagina, and also, by forcing medially adjacent tissues it aids in producing the normal curve of the rectum backward. This ligament is a very important struc ture, serving many purposes of support, and aiding in repair. It is continuous with the levator ani fas cia inferior, and above it is the levator ani fascia supe rior. The superficial layer of the deep perineal fascia of Colles is a strong fibrous membrane. It extends from one ischiopubic ramus to the other This membrane blends posteriorly with the lowe margin of the triangular ligament, producing partly ischioperineal ligaments. The superficial layer of the deep perineal ligament is less in extent in females than in men, on account of being pierced by the vagina. In perineorrhaphy it is of considerable aid in restoring the relation of the parts by allowing the deep sutures to draw the fascia medianward. The ischioperineal ligaments extend from the ischia

liberosities to the perineal body. They are strong aponeurotic bands of a very resisting character. They result from the union of the lower border of the triangular ligament with the deep layer of the superficial fascia. The fibers of these ligaments play an important rôle in extensive colpoperineorrhaphy. These ligaments form a conspicuous structure in every dissection of the female perineum. In the advancing head the ischioperineal ligaments are put on the stretch and gradually forced backward. Should they rupture, by extensive flap-splitting and deep suturing the two layers of fascia which blend to make the ligament could be partially restored.

Having examined the structure of the pelvis in detail we may now combine the anatomic factors which explain successful colpoperineorrhaphy. The first is the restoration of damaged fascia. A second important factor is deep suturing. A third element in a successful operation is the restoration of function by means of restored muscular relations. A fourth is the forcing in the median line of adjacent perineal tissue, and a fifth factor is the flap method of operation whereby there is no denudation or loss of tissue, and the flaps (skin and mucosa) avoid infection and insure primary healing. The flap method enables the operator to reach the seat of the lesion, either by splitting tissue or deep suturing with a handled needle with an eye in the end. Silk-worm gut which is used in suturing, being non-septic, may remain for weeks in position, like a splint, before removing. Among the fasciæ of importance are: The levator ani superior and inferior, the triangular ligament and deep layer of the superficial fascia, and the ischioperineal ligament. The operation of colpoperineorrhaphy is the result of evolutionary processes of failures and successes. In the beginning, it was considered sufficient to unite the superficial or external tissues at the site of the lesion. This experiment soon demonstrated its own failure, and later it was deemed essential to restore the deranged and lacerated muscular elements in the pelvic floor. The attempt at successful colpoperineorrhaphy by reuniting external tissue at the site of the lesion or restoring deranged or lacerated muscles to normal relations proved a failure to such a degree that it was evident that some other factor played a rôle; this factor was the fascia. The restoration of the lacerated tissue at the site of the wound, with the deranged and ruptured muscles, and the restoration of the deranged fascia are the three factors on which successful colpoperineorrhaphy rests. To Dr. T. A. Emmet must be given the credit of the view that the pelvic fascia played an important rôle in successful colpoperineorrhaphy. Experimental labors on the perineum, in a desultory manner, have been carried on for fifty years. But only lately have experimental and anatomic data been judiciously combined so as to render clear what are the useful methods in colpoperineorrhaphy. All successful surgical procedures demand an anatomic basis. The deranged and lacerated parts in colpoperineorrhaphy must be restored in a manner similar to that in operation for hernia. The successful surgical procedures in colpoperineorrhaphy have passed through the same evolutionary process as have the various operations for hernia. In hernia we must restore the anatomic relations, the obliquity of the inguinal canal, so that its valve-like action makes it impossible for the viscera to again protrude. In colpoperineorrhaphy, not only the anatomic parts should be restored, but the various canals and outlets must also be restored, to ensure permanent success. Deep suturing, so essential, is only groping after an anatomic base to restore the ground work. The same ideas are involved in the views of discerning surgeons, who suggest that if the sutures include sufficient of the rectovaginal septum, or if they are introduced deep enough to make forward traction, or if they include the sulcus on either side of the bulging vaginal wall, the operation will be successful. Dr. W. R. Wilson wrote a short but comprehensive article on the subject, suggesting excellent principles, but modestly claiming that the anatomic basis is still imperfectly understood. In the subject of colpoperineorrhaphy the origin of the lesion demanding operation should be studied. The cause of the lesion, requiring repair, is almost always the result of (the first) labor, more rarely other forces produce sacropubic hernia. The lesions of the perineum may come from the forward movement of the head lacerating the levator ani fascia superior and inferior, with damage to the ischioperineal (ligament) fascia and tearing of the triangular ligament, with consequent inevitable lesion of the deep perineal fascia. This will destroy the tone of the posterior vaginal wall, because the fascia has been separated from the vaginal wall near its outlet. If the distinct ischioperineal (ligament) fascia be torn, which is quite frequent in labor, the vulvar end of the vagina falls backward and begins its condition of rectocele; its fascial (and doubtless muscular) supports have been torn away. With a torn levator ani fascia superior the pelvic viscera will inevitably descend, for it is unphysiologic for a muscle to act as a continuous, tensionized support for viscera. But it must be remembered that the fascial layers of the pelvis are not only of value as visceral supports by separate and distinct connection in themselves, but they are of significant importance as serving a means of visceral support and for a point of attachment for muscles lying between their blades. The levator ani, which is the most important muscular apparatus on the pelvic floor, serves by its fascial attachments as a visceral support to the rectal and vaginal walls as well as to the pelvic floor, for the uterus is supported by the intact pelvic floor.

The pelvic floor may be considered as composed of two widely overlapping valves (Hart). Whatever disturbs the relations of these valves tends toward sacropubic hernia. The anterior pelvic valve is composed of the bladder, urethra, anterior vaginal wall and retropubic fat. The posterior pelvic valve is composed of the posterior vaginal wall, perineum and rectal wall. The pubic segment is attached to the symphysis pubis and composed of loose connective tissue. The retropubic fat is loose and spongy, the peritoneum may be easily stripped away from the bladder, and the bladder from the vagina. In labor, this segment becomes elevated and is the one which easily becomes deranged, or acquires pathologic conditions and especially is liable to prolapse or sacropubic hernia. The levator ani fascia superior becomes torn away from the walls of the bladder and vagina, allowing the intra-abdominal pressure to force the bladder and vagina downward.

When the uterus prolapses (sacro-pubic hernia) the anterior vaginal wall appears at the vulva first. The strong levator ani fascia has been torn from its walls and when the same fascia has been extensively torn from the bladder it prolapses also. In vesical prolapse the peritoneum with its many cleavable

planes of subperitoneal (fascia) tissue becomes torn from the bladder. The sacral valve of the pelvic floor, consisting of the posterior vaginal wall, the perineum and rectum, is attached by strong fascial connections interwoven by muscles to the coccyx and sacrum. In labor, this segment is forced backward and straightened out. If it becomes defective by laceration at the perineal body the vagina loses its normal curve and sacro-pubic hernia is initiated, i. e., retroversion begins, which is the inevitable factor in sacropubic hernia. The uterus itself has nothing to do with prolapses. Intra-abdominal pressure and defective sacral and pubic segments account for prolapse; the sacral segment is fixed; the pubic segment is movable.

The functions required of the pelvic floor are to resist intra-abdominal pressure and to allow rectal and vesical functions. The structural anatomy of the pelvic floor must not only be studied in general as to it segments, valves, muscles and fascia but each individual organ should be studied as regards its supports. The uterus has its individual supports, which, though not separate from the fascia and muscles, should be well considered, for colpoperineorrhaphy may be required for (prolapse) sacro-pubic hernia without visible lacerations. The first elemental individual supports of the uterus are the uterorectal (sacral) ligaments. They consist of two folds of peritoneum embracing muscular and connective tissue extending from the posterior surface of the cervix to the rectum (perhaps some fibers do extend to the sacral fascia). These ligaments are an extension of the muscular connective tissue fibers of the upper end of the vagina backward. As Dr. Frank Foster notes, the vagina and uterorectal ligaments form a balance beam on which the uterus rests. Yet it should be borne in mind that organs do not rest on bases, but are swung on supports or mesenteries. The brain, liver, heart and uterus are all suspended by supports and do not rest on other organs or bases. The uterorectal ligaments are powerful, peritoneal, muscular and connective bands which vigorously suspend the uterus by the neck. Careful dissections and vaginal hysterectomy will demonstrate that the uterus could not descend without the uterorectal ligaments became elongated.

These ligaments are a part of the musculo-fascial support of the pelvic viscera. The vaginal tube supports the uterus by being well embraced by the levator ani fascia superior and the levator ani muscle, and also by being well padded and surrounded by fascial planes of connective tissue fixed in its walls and adjacent structures. Fat pads and acts as a support by stiffening folds.

In colpoperineorrhaphy, it is well to remember that we have a fixed pelvic segment and a movable or displaceable segment. It will aid in repair. The movable pelvic segment comprises the urethra, bladder and vaginal walls. This segment is bound together by peritoneum on a very mobile base and by a considerable mass of loose connective tissue.

This segment becomes displaced by labor, distended bladder, vagina or rectum. If its fascial connections become torn, sacropubic hernia is inevitable. The fascial connections are considerable above the vulva, consisting of the levator ani fasciæ superior and inferior and to some extent of the levator ani muscle. Sacropubic hernia, arising from lacerated fascia of the movable pelvic segment is recognized by the vagina and bladder bulging downward at the vulva and making the vulva appear as a waist with the puckering string gone. The worst and most damaging cases of laceration are those which begin from the inside and progress outward, i. e., the fascia begins to tear high up in the rectovaginal septum, on the sides of the bladder and vagina. These are the cases which present distressing symptoms; when standing are worse on account of disturbed circulation and are pronounced "prolapse" by the general physician. In such cases the anterior vaginal wall appears first at the vulva, then the cervix and finally the posterior vaginal wall. The bladder gradually sags downward and difficult urination is added to the already existing train of symptoms. In lacerations of the sacral segment of the pelvis the lesions are more visible. The perineal body suffers especially. It straightens out the fixed sacral segment and retroversion and inevitable subsequent sacropubic hernia results. The visible laceration of the perineal body was originally considered the chief requisite for repair and also the type of colpoperineorrhaphy. But the study of the pelvic fascia shows why the operation failed or succeeded. Frequently it may be observed that the perineal body is visibly torn, but no evil consequences follow, because the fascia remains intact. The rectum belongs to the fixed segment. It does not prolapse, but its wall stretches, elongates. As the advancing head forces forward and tears the levator ani fascia superior and inferior as well as the ischioperineal ligaments, the levator ani muscle also becomes deranged but practically the restoration of the fascia restores the muscles. The muscular layers of the pelvic floor are two—superficial and deep connected—and blended at the perineal body both by the muscular and fascial relations. The deeper layer is the levator ani muscle which descends from the sides of the pelvis in the form of a boat or bowl to its attachments on the pelvic floor. The superficial layer consists of the transverse muscles of the perineum, which extend from the tuberosities to the center of the perineum and also the bulbo-cavernosus, which surrounds the vaginal outlet. All the muscles are related to fascia, as the levator ani inclosed in double blades of fascia, i. e., the levator ani fascia superior and inferior. The deep transverse muscles lie between the triangular ligament and Colles fascia. The bulbo-cavernosus and superficial transverse muscle lie between the two superficial perineal fasciæ. The ischioperineal fascia is but the thickening of the lower border of the triangular ligament and Colles fascia. The significant importance of the fascia of the pelvis becomes at once apparent, not only in maintaining the integrity of the pelvic floor, but in all repair of the same. The pelvic fascia is the chief element in maintaining perineal muscular relations. The pelvic fascia may be divided into deep and superficial layers, according to the deep and superficial layers of muscles. The deep pelvic fascial layers are united to the more superficial pelvic fascial layers in the perineal raphe, holding the pelvic fascia as a unit. The superficial fascial layers of the pelvis are attached from the ischial tuberosities to the pubic rami and stretch across the anterior perineal triangle. They shut off the pelvic outlet except at the vulvar orifice. Fascia may be torn without its associated muscle being torn. In perineal laceration the muscles lying between the fascial layers may become separated as to loops or as to the attachments of one or both ends. Also the fascia ani muscle may be lac

erated in different localities and this allows complete repair.

When the muscular layer between the fascial layers separates, the muscular fibers retract irregularly toward the proximal end, leaving gaps which are difficult to effectually repair. The rupture and retraction of the levator ani with its fascia makes the deep sulcus found on each side of the bulging rectocele, because the fibers of the levator ani retract laterally toward the pelvic walls. It is evident there is a deeper factor in perineal lesions than visible lacerations. The deficiency in perineal lesions is not in proportion to the apparent extent of the injury. Every physician has noticed multipara with considerable external laceration of the perineum, with apparently little discomfort, and with the pelvic organs but slightly disturbed, while in other cases, with slight apparent lesions, complaints are serious. I have seen extensive visible lacerations with almost no complaints and apparent health. Again, we may observe cases when the perineum does not appear lacerated, but the prolapsed vagina, the bulging rectocele and vesicocele appear at the vulva in a remarkble degree. In fact, as Dr. Emmet remarks, it looks like a bag which has lost its puckering string. There is a different explanation for each of the above classes. In one, the pelvic fascia has suffered in the lesion, and in the other, only a few muscle loops and possibly the perineal body. When the lesion involves the pelvic fascia its consequent result is that the circulation is deranged seriously, because the vessels are held in definite relations by the fascial planes, hence the discomfort on standing and exercising is from congestion. Baker Brown simply united the torn tissue at the vaginal outlet. Seldom does this simple measure afford any real relief from perineal laceration, for subjects with such visible slight traces suffer but little. In general the operations for the relief of perineal laceration are a failure. If the rectovaginal septum (fascia and muscle) be not brought in the grasp of the deep sutures success will not be obtained even though the vulva be closed. The secret of Emmet's success lay in the denuding of the vaginal septum, i. e., utilizing the tissue posterior to the vaginal wall. In fact, if the levator ani fascia superior and inferior be not lacerated the subject suffers but little from the lesion, though the perineal body be torn through to the rectum. The levator ani fascia superior forming the gutter or sulcus on each side of the vagina is firmly blended with the vaginal canal as the same strong fascia in the male surrounds the prostate. In labor, in perineal laceration we should not merely look for lesions in the posterior commissura of the vulva, for that is done by the escaping head and shoulders, and is visible, but we should look for concealed lesions of the strong fascia, the sulcus on each side of the vagina. The most serious lesion of labor may occur without visible external injury. This lesion is in general a separation of the fascia from the vaginal wall. If the fascia be torn from this, the posterior vaginal wall will not be drawn against the anterior and the canal will be filled within; it will be like an open collapsed bag. The fascia together with the muscles holds the vaginal and rectal canals in a closed condition, excluding air. The ballooning out of the vagina with but little injury to the perineal body is indicative of fascial lesions within the pelvic cavity along the vaginal canal. The vaginal rectocele is due to the drawing aside of the levator ani fascia superior and but little to the external laceration. The beginning of discomfort on assuming exercise is due to deranged pelvic circulation, to dilation and straightening out of veins, to non-uniform support of the blood-vessels and nerves by the proper connective tissue. The advancing head crowds the fascia forward, and if the labor is terminated without forceps, the rents begin chiefly in the rectovaginal septum. It is well to decide what and where the laceration is, so that tissues may not be either denuded or split unnecessarily, for it is not unfrequent to see tissues united which were never involved in the lesion. Perhaps sufficient has been demonstrated, anatomically and clinically, to show that the lesions of the perineum which disable and discomfort the patient are chiefly lacerations of the fascia and secondarily of the muscles. On this view we base our labors. If this be the case, we can easily see that Emmet secured success by denuding an elliptical area of the vaginal mucosa on each side in the vaginal sulci. The curve of the denuded area corresponds to the posterior curve of the rectovaginal septum, and is situated within the introitus. Now, by introducing deep antero-posterior sutures, the levator ani fascia superior and inferior may be reunited, restoring the curve of the posterior vaginal wall and the fascial layers at the vulvar outlet. In reuniting the levator ani fascia superior and inferior the levator ani muscle becomes also reunited, but in an imperfect degree. The levator ani is closely embraced by its superior and inferior fascial planes, as from its origin, insertion and relation it depends on its closely associated fascia. The restoration of the function of the levator ani muscle must be accomplished through restoration of its intimate planes of fascia. If success depended on the muscle chiefly, it would be necessary in rectocele to reunite the separated levator ani loops anterior to the rectocele in the median line or raphe, so the symmetrical muscular action would be restored. It is true that to secure muscular action of the levator the loop must be so repaired that the fibers shall start to act approximately from the raphe on both sides, but this is accomplished by reuniting the levator ani fascia as near as possible in the median line, which brings the muscular loops with it. The levator ani fascia superior and inferior is really a sheath for the levator ani muscle to accomplish its functions. The sheath can not be torn without creating damage to the muscle. In rectocele, this fascia is so torn and stretched that the anterior wall of the rectum loses its muscular support and bulges forward. Whether the sutures be introduced antero-posteriorly or transversely, it matters but little, if they include in their grasp the levator ani fascia existing in the lateral sulci of the vagina, and whatever is done, to be successful, the rectovaginal septum, composed chiefly of fascia, must be restored to reproduce the normal curve of the posterior wall of the vagina. Mr. Lawson Taits' flap operation on the perineum accomplishes exactly what Emmet's operation in the lateral vaginal sulci does, with the exception of denudation. Both operations, when properly and successfully executed, result in the restoration of the continuity of the deep and superficial fascial layers of the pelvic floor, with the establishment of partial or complete muscular function. The deep sutures reunite the structures (fascia and muscles) at or near their normal points of attachment. Anatomically then, the objects to be obtained in an operation for coloperineorrhaphy are

1, the restoration of the levator ani fascia, superior and inferior; 2, the reunion of the fibers of the levator ani muscle so that it will functionate—both fascia and muscle must have relations at the perineal attachment; 3, the restoration of the transverse perinei muscles which draw the vagina lateralward, causing it to remain open: 4, the restoration of the ischioperineal ligaments in regard to the perineal body; 5, the posterior curve of the vagina must be reproduced by restoring the rectovaginal septum; 6, a new perineal body should be restored so that the natural backward curve of the rectum and forward curve of the vagina should persist; i. e., normal relations should be established between the perineal center or body, on the one hand, and fascia and muscle on the other. The perineal body—"punctum fixum"—of vulvar surface relations should be restored.

The pelvic floor is composed of muscles, fasciæ, areolar and elastic tissue. These structures are interwoven into distinct though complicated relations and fill the gap of the pelvic outlet. The pelvic floor is composed of two halves, whose structures arise from the lateral walls and join in the medium line. There are two muscles, two fasciæ and two ligaments of each kind. If one will carefully study in dissection the levator ani and the bulbo-cavernosus muscle he will be impressed with their functional comparison. Both are sphincter muscles. Both have connection with skin as most true sphincter muscles possess. The three points of insertion of the bulbo-cavernosus may be considered as one muscle. They contract together and have a similar function. The common feature of the two muscles is their attachment to the terminal fibers of the rectum and vagina. The sphincter ani is closely united to the muscles of the pelvic floor by tendons and fascial attachments. The object of the muscles of the pelvic floor is to control the lower ends of the vagina and rectum. Fascial structures are common to muscles which have to afford sustaining power, as those of the abdomen, back and thigh.

(To be continued.)

A STORY OF CHICKAMAUGA.

BY R. STANSBURY SUTTON.

Major and Chief Surgeon, U. S. V., Commanding Second Division, First Army Corps Hospital.

My apology for intruding upon the columns of the JOURNAL is multiple. I am a veteran of the Civil War, and I did duty upon the battle-field of Chickamauga, upon which I have been again on duty since the 7th day of July. My knowledge of hospitals is of long duration, and extends to the hospitals of Europe as well as those of our own country. Moreover, while the hospital under my command needs no defense for its efficiency under my own administration, I feel that my colleagues in the army and in other hospitals have been most unrighteously abused—from the Surgeon-General at Washington to the humblest lieutenant serving as an assistant-surgeon in the regiments. In this defense of a noble profession, I do not excuse dereliction of duty or stupidity in any medical officer. Occasionally a medical officer is found who is incompetent, not always because of want of medical knowledge, but by reason of his disposition, which disqualifies him for his position. Such men are in the army, but they are few.

Let me photograph for you the pictures in my mind as they were registered. On July 6th I reached Chattanooga at 8:30 P.M. My hotel for the night was the Read House. At 5 A.M. of the 7th I arose, put my head out of the window and counted twelve soldiers lying drunk in the street. At the Central Depot, a few hours later, waiting for a train to Lytle, where I must report for duty, I observed soldiers drunk and in the company of prostitutes. A police officer at the depot, of whom I made many inquiries suggested by my knowledge of Chattanooga at the time of the Civil War, told me that the town was full of drunken soldiers and prostitutes, the latter numbering many hundreds, of all shades of color and damnation.

A railroad ride of an hour, between Missionary Ridge and Lookout Mountain, southward, and the station of "Lytle" or "Battlefield" was reached. Wooden sheds surrounded a space opposite the depot, forming an aggregation of restaurants, fruit and nut vendors, variety shows and houses of prostitution. An hour later I reported for duty and was assigned to the staff of Brigadier-General Rosser, of Confederate army fame.

In the afternoon I returned to Chattanooga and slept that night in the Southern Hotel; at 8:30 next morning I counted, from the window of my room, seventeen soldiers lying drunk in the street. Hundreds of others lay about the town in the same condition. Who was responsible for this? I ask the honest reader if the sickness in the army springing from drunkenness and prostitution was due to the carelessness of the medical staff of the army? This loose military and civil government had been prevailing for weeks, and the army was suffering from dissipation and prostitution. Not less than 5 per cent. of about 50,000 men were incapacitated for their full duties by syphilis or gonorrhea or both. They flocked in at the sick calls, the quarters were besprinkled with them, and they furnished fully 80 per cent. of the surgical patients of the field hospitals. How did they conduct themselves there? Their appetites were not inspired; they craved full diet, and, because they were in the hospital, wanted all the delicacies provided for sick men who could eat but little and drink soup and milk. They resented their grievances by writing letters to newspapers abusing the hospitals and the doctors. An anxious mother from the far North becoming alarmed, came down to Chickamauga. She had read these letters. Her own son had written her his views and told her of the horrors of the army hospital. Upon her arrival she poured out her seven vials upon the hospital and the staff, and then demanded that she be conducted to her "darling boy." The surgeon addressed, by this time a little warm under the collar, said: "Your son is out in the woods under the trees; he is doing very well, but he has had a very bad attack of gonorrhea." "What's that," she snapped out. "Clap, madam, if you please." Many examples of the outrageous behavior of this class of patients might be given. But the subject will not bear investigation in the daily press, notwithstanding its libelous and criminal attacks upon the hospitals and their medical staffs. Can you accuse the doctors for not preventing this? You can not do it. The civil authorities of Chattanooga, to their eternal disgrace, are largely responsible for this matter. They bowed down before the brazen image of cupidity and resolved to do nothing that would stay the draft upon a soldier's pocket in their morally rotten corporation.

On July 8 I took the position of Brigade Surgeon on General Rosser's staff. I remained on this staff

s Brigade Surgeon until August 1. General Rosser is a man who has been educated in the art of war from West Point through all the wars of the last and present generation. He is kind and resolute, companionable and pure in his daily conduct, indefatigable in the pursuit of his duties despite poor health. Not a drop of spirituous liquors of any kind were ever seen at his headquarters, and as we stood about our mess table, with its plain and simple food, frequently in the rain without cover, General Rosser, with all heads uncovered, never failed to invoke the blessing of God upon the table and its participants. But General Rosser, like all old generals of the army, was physically impaired. Their livers are bad, their digestive organs generally are permanently deranged, and the dynamo in every one of them has begun to fail. General Rosser broke down and returned to his home in Virginia, and General Poland, Division Commander, died. Other old generals, whom I saw, had seen their best days, and altogether would have formed a magnificent advisory board, but their places in the field should have been filled by younger men. Surely the medical profession of the army were not responsible for this.

Within a week after I joined General Rosser's staff, I was struck with the difference in the morning sick reports of the different regiments forming the brigade. It stood in the relation of 1, 2, 3. Why was the First Pennsylvania regiment first, the Fourteenth Minnesota second and the Second Ohio third, or 10, 20, 30 sick? The camp was the finest I had ever seen; the food was good and abundant. The weather was then fine; later it became atrocious. The Pennsylvania regiment was an old National Guard regiment, their officers and men were city-bred, and before entering the service they had culled out of the regiment every man and officer of doubtful health. They slept in the company streets, when they were dry, and kept their camp like a pin. The Fourteenth Minnesota physically were apparently in advance of the Pennsylvania regiment, but they were largely country-bred, slept in their tents, three and four to the tent. The tents were not ventilated by window slots at either end of the ridge pole, and they usually dropped the flies at the entrance. The Second Ohio stood below both in health record. A hollow in the land stretched through the camp. The First Pennsylvania and Fourteenth Minnesota were at its head, the Second Ohio at the foot. Later they got the wash from the rains, and in spite of magnificent efforts, like the other two regiments, concluded to move. This brigade, officers and men, numbered about 3600, with but one medical officer to a regiment. The colonels, Good, Van Duzee and Kertz, were able men, ever vigilant, kind and devoted to their duties, and I consider it a great privilege and honor to add them to the list of my many army friends.

A regiment of troops in the field are too much for a single medical officer. Each regiment was originally provided with three, but two out of each regiment were detailed to other duties. At the field hospital these detailed surgeons were busy, hard-working men. But many of them were detailed to the ambulance corps, where they did nothing but play poker, crack jokes and watch the mules switch off flies, or sometimes do other amusing things such as mules will do. I sent a remonstrance through military channels to corps headquarters, setting forth my complaint, and asked that the medical officers of the brigade at the ambulance station be sent back to their regiments. Lieutenant-Colonel Huidekoper, the corps surgeon, refused to return my medical officers. The division surgeon interfered and got one of them back—Lieutenant Dorsey of the Fourteenth Minnesota.

I will digress here to speak of the physical character of the soldiers of the entire Division—13,000 men. Serving as a member of the Discharge Board, I was almost daily examining soldiers for discharge from the army. Among these men I found no end of hernias, many of them existing at time of enlistment. One man had inguinal hernia and club-foot. Many had severe astigmatism. Some were deaf, scores of them had constitutional syphilis, and many had tuberculosis. A great many had organic disease of the heart, and a host had bad feet or bad teeth. How could a lot of physically bad men fail to make a large sick list? Were the doctors responsible for this? The medical men who passed these men into the service certainly were, but they got only forty cents per capita for examining these men as recruits. They had an excuse for poor work. It was the same as that attributed to Mark Twain when a pilot on the Mississippi River, when he was upbraided by the captain, to whom he replied that he thought he was "pilotin" very well for $12 a month.

On August 1 I was detached by higher authority and put in command of the Second Division, First Army Corps Field Hospital of 263 beds. At the hospital I found 162 patients, six medical officers, a lieutenant, a commissary of subsistence, and 39 out of 96 men who should have composed the hospital corps. Out of these 39, I was to find kitchen men, laborers, guards, clerks and nurses. Of the number on hand some were physically ill-suited or actually ill. Six noble doctors were on duty—Majors Charlton, Bagerly and Myers, Captain Dutton, Lieutenants Little and Nesbit—taking all the three watches of eight hours each, and 162 patients. I was cut down to depend upon twelve or fourteen nurses for day and night duty. These were soldiers with only accidental experience, and but little of that, in civil life. Seventeen sick soldiers lay upon the ground. There was poor preparation of food; a limited supply of proper food for the very sick. Major Charlton, whom I relieved, was ill. The fault in this instance was twofold. The division surgeon and the purveyors of lumber, cots, etc., were to blame. I soon, but after much perplexity, got over the difficulties and the hospital flourished. Typhoid fever, next to venereal disease, has been the scourge of the army at Camp George H. Thomas. What was its origin? Why its prevalence?

Let us take a side view of the subject. The typhoid bacillus is a specific germ. If introduced into the intestines of man it produces a train of symptoms known as typhoid fever. Now, was it in the water or was it in the food? Suppose for a moment that it was not in either the water-supply or army rations. How did it reach the soldiers? It is a fact that typhoid fever was prevailing in the neighborhood of Chickamauga Park before the army camped there. It is also stated that it developed in the first regiments who camped in the park. The people in the neighborhood sold milk and farm products to the soldiers, and if they had typhoid fever, as it is known they had, they likely conveyed the typhoid germs in their milk-cans and probably in their fruit. They watered their milk probably with infected well water, and handled their

sick and their fruit. Typhoid fever was not epidemic at Camp Thomas, and its spread was not rapid until within two weeks. It was spread from detached foci of infection and not from one focus. I am convinced, after no little investigation, that the water-supply from natural springs and the pipe-line at Chickamauga was good and did not contain the typhoid germ. It was not in the army rations. I believe that it was first introduced by the hucksters; that troops arriving brought soldiers infected at home or in other camps, and that it spread from one to another in other ways than through the pipe-line or commissary department. But were the doctors responsible for its introduction? Not at all. Were they responsible for its expansion? They fought it as well, probably, as they could in army life and under the difficulties attending camp practice. In the hospital which I had the honor to command, out of more than 900 patients we had 14 deaths from all causes, probably 8 from typhoid fever. The mortality in the Second Division, 1st Army Corps, was certainly not excessive.

The Red Cross Society, the National Relief Association and the United States Government provided more than enough. The combination was lavish. Some things I would have liked to have had more of. Wine, brandy and whisky were shortages, but of everything else to eat and to wear in a sick-bed, I had an abundance. On the 26th of August, I turned over a surplus of nearly half a ton of materials to the Red Cross Society. My work was done at Camp Thomas, and the day following we moved to Knoxville. As I left Camp Thomas, I received a check from the Red Cross Society at Pittsburg, Pa., for $500.

The hospitals and camps have been full of blooming liars, who have filled the newspapers with the most alarming stories of cruelty and neglect. And for the sake of justice they must be met and denied. Cots and lumber were hard to get about August 10, but we soon broke the blockade and got all we needed.

At Camp Thomas or Chickamauga Park the Sternberg Hospital is now open. It is designed with the expectancy of reaching 1000 beds. It is a field hospital. The quarters are the army hospital tents and wooden barracks. The beds are iron, mattresses hair, mosquito canopies over all, and trained female nurses are in attendance. The world has never seen such a field hospital. Hundreds of soldiers will there find more luxury than they ever knew at home, yet the day when the public press will put the Sternberg Hospital in the crucible will likely arrive.

Let the noble fathers and mothers of this Nation know that the medical profession have been as devoted to their sons on the historic field of Chickamauga in this war as were our colleagues to the Nation's sons during the Civil War. It has been God's mercy in prolonging my good health and love of country and giving me the ability to say that I witnessed the devotion to duty of the surgeons in the Civil War and in this war upon the same field of Chickamauga. The soldiers of this war have had their trials, but I can call upon my comrades of the Civil War who are out again now to say whether the following assertion is true or not: The soldiers, sick and well, at Chickamauga Park, have had a picnic as compared with the soldiers there in 1863 and 1864.

The park is infected now and will be rapidly abandoned, as it should be. The sink problem has been mentioned by the newspapers. It is a very difficult one to discuss. The problem in ordinary soil, with plenty of help and good tools, is easy enough. But in Chickamauga Park conditions of soil prevail which make it very difficult to construct a sink with ordinary labor and tools. The soil is tough clay deposited in a bed of rocks of all shapes and sizes. The clay stratum is deep. It is possessed of poor absorbing qualities, and if the rain fills the sink with water it holds it like a barrel. To get a sink a few feet deep is of little consequence. It is necessary that the depth of the sink be 12 feet, and for working space, it is therefore necessary that they be 5 feet in width and 12 feet long. Such a sink requires many reliefs of labor. After completion it must be surface-ditched; when to this you add the ditching of nearly three acres of ground for a hospital site, one may gain some idea of soldiering.

To the regimental commanders of the Second Division, First Army Corps, I return many thanks for the large details of men to aid me in putting the grounds of the hospital in good hygienic condition. When I left the hospital site on the morning of the 27th of August, the entire plant having been delivered for shipment at Rossville, the grounds were ready for a picnic, not a shred of anything being left unburned, not a sink being left otherwise than in a perfect state of innocuousness, all being filled, and banked with lime and earth. If your readers have had some of the deceptions removed from their minds and will kindly turn their wrath from the medical officers of the army, I will be well repaid for the time spent upon this communication.

THE RETURNING ARMY.

BY N. SENN, LIEUT.-COL. U. S. V.
CHIEF OF THE OPERATING STAFF WITH THE ARMY IN THE FIELD.

The war is over and the heroes who freed the Western Continent from Spanish despotism are returning home. The first war of invasion on our part has been a short, decisive one. Only four months have passed by since the Chief Executive issued the first call to arms, and more than we expected has been accomplished. The outside world, which has sneered too long at our fighting strength as a nation, has been convinced that it is dangerous to trifle with Americans in matters of war. In less than two months after war was declared we had more than two hundred thousand men in the field, eager and anxious to face the dangers of active warfare. Less than one-half of this army took part in the invasion. The enemy's navy was entirely destroyed; not a single ship that came within range of our guns escaped. The proud Spanish fleet is a total wreck in American waters, a source of pride to our navy and a significant object lesson for all foreign nations. Santiago fell before our victorious army; Porto Rico yielded after a few skirmishes and Spain accepted our terms of peace without much argumentation, after the hopelessness of her cause had been demonstrated by our invincible army and navy. Peace has been restored, and the returning soldiers of the volunteer army will soon return to citizenship and resume their ordinary vocations of peaceful life.

What a contrast between the invading and returning army! This contrast has reference not only to size but also to appearance. Thousands have died from wounds and disease. Yellow fever, dysentery, malaria and typhoid fever have been and continue to be our most formidable enemies. We had no great

difficulty in silencing the Spanish guns, but we have been less effective in preventing the origin and spread of these, the greatest terrors of camp life. We can calculate with some degree of precision the loss of life sustained in battle, but it is impossible today to estimate the ultimate damage inflicted by disease. The naval forces scored the greatest victories with little loss of life; they escaped disease and its consequences, to a large extent, and were subject to little or no privations. The invading armies suffered the brunt of privation and discomforts incident to an active campaign. The troops in camps who were denied the privilege of taking part in the invasion of Cuba and Porto Rico had their share of deaths, sickness and hardship. It is safe to say that not half of the soldiers engaged in this short war are in a fighting or working condition on their return home. It is a sad sight, indeed, to witness the disembarkment of a transport arriving from Cuba or Porto Rico. Every one of the vessels brings from fifty to one hundred and fifty disabled men requiring medical treatment. All of the men left on the outgoing transports in good health and cheerful mood; all who arrive show the effects of the campaign. Many have died in our new possessions, many have been consigned to the sea on their way home, others have reached the shore in a dying condition. The crowded transports, the inadequate provisions for proper food, have made the voyages to and from the seat of war a source of hardship instead of health and pleasure. The emaciated forms, the sunken eye, the hollow cheek, the pale, bronzed faces, the staggering gait, show only too plainly what can be done by disease, a tropic climate and improper food in disabling an army in a few weeks. In this respect our experience is a repetition of that of our enemy. It is well known that the Spanish army lost 50 per cent. of its fighting force from the same cause in two months after landing in Cuba. The Spanish surgeon I met inside of the lines of the enemy, four days before the surrender of Santiago, when we delivered to him, under a flag of truce, sixteen wounded Spanish soldiers, informed me that when his part of the army reached Cuba the men were all in good health, and that now many were sick and none well. He drew a sad picture of how their ranks were thinned out by yellow fever, malaria and dysentery. The outbreak and spread of typhoid fever in our home camps, so early during the campaign, is responsible for more deaths and suffering than any other cause. Many of our soldiers carried the infection with them to Cuba and Porto Rico, and were taken ill on the transports or soon after landing. It is much more difficult to keep typhoid fever out of the army than yellow fever. The yellow fever which our troops in Cuba encountered was of a mild type. Comparatively few died and most of the cases recovered after an illness of but a few days. Typhoid fever runs its typic course of three weeks or more, little influenced, as far as time is concerned, by medication. It is a disease which, above all others, requires careful nursing. The necessary attention to typhoid-fever patients in nursing and treatment is a matter difficult to obtain, even in a well-equipped hospital with all needful appliances. The management of such cases in field hospitals is necessarily attended by many difficulties which tax to the utmost the experience of the medical staff and nursing corps. Considering the limited resources at our command in the treatment of this disease, in our home camps and our new possessions, it is surprising that the mortality has not been greater. The Sisters of Charity and the trained female nurses from different cities, have done most satisfactory work in our home camps, crowded with typhoid fever patients. Many a soldier on his recovery from the disease will feel grateful for their faithful services.

CAMP WIKOFF.

Camp Wikoff is now a great hospital. It is located on Montauk Point, L. I., a narrow strip of land surrounded on both sides by salt water. The country is hilly and treeless and the sandy soil is covered with a scanty growth of grass. Between the hills are cup-shaped depressions with a marshy soil, which after rains are filled with stagnant water. These diminutive marshes threaten danger in case of a prolonged encampment. They are undoubtedly, all of them, the natural breeding-places of the plasmodium malariæ. They will soon become contaminated with the fecal discharge from hundreds of typhoid fever cases, as many of the sinks drain directly into them. I am told that the water-supply from the artesian wells, while not ample, is otherwise satisfactory. The small railroad which terminates here from New York, monopolizes the whole business of transportation, as this exclusive right was made conditional in securing the ground for camp purposes. This is greatly to be regretted, as steamer communication could be readily established, which would facilitate the present unusually large passenger and freight business between the camp and New York. Politics and personal interests have figured conspicuously in the management of the present war. Departments have been severely criticised, when a thorough investigation would often reveal a power behind the throne. If we had steamer traffic between here and New York we would not have to wait for days for the so much needed supplies. The little railroad has had sufficient influence in cutting off competition and in increasing correspondingly the value of its stock, and we here are suffering the consequences of this Judas Iscariot bargain. The whole little peninsula is a tented field. Regiment after regiment is arriving, day after day, seriously testing the quartermaster's department. All the troops that came from Cuba must land here to comply with the quarantine regulations. A detention hospital has been established near the landing, to which all suspects are consigned for the required length of time. Near the hospital a large disinfecting plant has been erected. So far no cases of yellow fever have been imported. The general hospital contains at the present time (August 26) nearly one thousand patients and all the sick in the camp will swell the number to 1500. The landing of so many sick in such a short time has brought about an overcrowding which, with the present facilities and resources could not have been prevented. Colonel Forwood, Assistant Surgeon-General, selected the camp site, and was the first man on the ground. His immense military experience, gained during the War of the Rebellion, fitted him in an admirable way for the difficult task imposed upon him. Colonel Forwood is an authority in military surgery and endowed with excellent administrative talents. His work here will be the crowning effort of his life. He has worked night and day since he has assumed his duties here. He is a friend of the soldier and will not leave a stone unturned to be of service to him. He has exclusive charge of the hospital construction, and his work

was much admired by two staff surgeons of the German army, Drs. Steinbach and Wildemann, and by Lieutenant-Commander Tomatsuri of the Japanese navy, who came from New York to the camp with me. As they expressed themselves, the field hospitals here were the best they had ever seen. Colonel Forwood is ably assisted in his arduous duties by Majors Heitzmann, Brown, Nancrede and Wing and a large staff of acting assistant-surgeons. The writer, on his arrival, was placed in charge of the surgical work. An operating tent was erected and placed in working order with the assistance of two Sisters of Charity and Acting Assistant-Surgeon Greenleaf. The tent is floored and divided into four sections. The front part is the operating-room, with two side tables two feet in width the whole length of the room. The tables are covered with rubber cloth. An army operating-table and a few stands constitute the balance of the furnishing of the room. The next section is open on the sides to allow a free current of air and serves as an office. The next compartment is the preparation-room, fitted out with formaldehyde and steam sterilizers and sufficient shelf accommodations. The last section is used as a storeroom for dressings, splints, antiseptics and drugs necessary for the treatment of surgical cases.

Gen. Joseph Wheeler is in command of the camp, and although debilitated by the campaign and disease, he attends to his duties wtth a regularity and devotion which have characterized his whole military career. The sick are being cared for at the present time by fifty Sisters of Charity and sixty trained female nurses. One of the things that was greatly admired by the foreign military surgeons was the efficient work of the hospital corps. They were charmed with the way in which the patients were handled and the gentlemanly conduct of the litter-bearers. Less praise was bestowed on the military bearing of the men in camp, from the highest officers to the ordinary private. The military spirit seems to have been fully subdued in the enemy's country. The sentries move about sluggishly and seldom deem it worth while to come to a "present arms," no matter who may come within saluting distance. Men walk about in clothes showing only too distinctly the absence of whisk-broom or brush since they left Cuba. Guns, bayonets and scabbards have become rusty and show an entire lack of proper care. All drills are suspended and the whole camp presents more the appearance of a picnic ground than a military post. Officers and men are evidently impressed with the idea that their work is done, and while away their time in a way requiring the least amount of energy and exertion possible. In this respect our troops form a strong contrast with the German army when it entered Paris, after one of the most bloody wars and after a prolonged siege full of hardship and privations. On that occasion every soldier was in a condition to go on parade and to pass with credit the inspection of the most exacting officer. Such looseness of discipline as seen here at this time is not calculated to inspire the outgoing army with the proper military spirit that should be maintained and cultivated under the most adverse circumstances. Strict military bearing is also sadly lacking among the medical officers—a source of disappointment and surprise to the corps of acting assistant-surgeons, who entered the service with the full expectation that the reverse would be the case.

Camp Wikoff, Montauk, N. Y., Aug. 27, 1898.

THE NATIONAL CRY.

BY N. SENN, LIEUT.-COL. U. S. V.

CHIEF OF THE OPERATING STAFF WITH THE ARMY IN THE FIELD.

Unrest, criticism and grumbling are the accompaniments and heritage of every war. These symptoms of war fever have been unusually well developed during the war just ended, and they will be discussed for a long time after the treaty of peace has been signed. After an uninterrupted reign of peace for more than thirty years, the war cloud that came upon us so suddenly and unexpectedly provoked a commotion among the people unparalleled in degree and extent since the War of the Rebellion. All eyes were turned in the direction of the seat of war, and the contents of our enterprising and prolific newspapers were devoured with an eagerness unknown in any other country. It is strange that with all this great national unrest the current of commerce and business pursued its natural course. While our troops were engaged in war in foreign lands, the tilling of the soil, the hum of industry and the ordinary avocations of life continued as though harmony and peace reigned universal. The American never forgets that patriotism is not limited to the battlefield. The conscientious performance of duties at home, the fireside, the farms, the workshops, the manufacturing and business places, is one of the things essential in the successful prosecution of a war. This fact was recognized by our people, and the result has been that the prosperity of our country has suffered little, if any, during our first war of invasion. Criticism is a part of human nature. It is seen everywhere. It affects the educated as well as the ignorant, it extends from the cradle to the grave, it involves one sex as much as the other, it moves the well as much as the sick, it infects the pulpit as well as the stage, and it comes to the surface in the army from the commanding general down to the lowest of all privates. It is amusing to listen at a camp fire to the remarks made from all sources as to how the campaign should be conducted. The average private discusses the most complicated strategic problems with an ease as though he were repeating the multiplication table or the Lord's prayer. The generals high in command ease their conscience by criticising their subordinates most unmercifully, if any thing has gone wrong. Wise as well as ignorant men, a thousand miles away from the seat of war, have their convictions as to what should be done and are free to express them. Criticism increases in severity and extent in proportion as confidence is weakened and undermined. As we live in a free country criticism finds a fertile and productive soil everywhere and anywhere. The unbridled liberty of the press encourages and fosters it. Like swearing and other vices it is engendered by environments. Just and wrathful criticism is legitimate; criticism the outpouring of impure selfish motives is baneful. Our energetic, enthusiastic press is entitled to a great deal of credit in giving to the public the war news so promptly and completely, often at an enormous expense and severe danger to life. The American reporter has no equal in any country for obtaining news regardless of cost and risk. The reporters not only culled the news, but often took a hand in supplying the sick and wounded with fruit, tobacco, and delicacies. How quickly the reporters sniffed the latest news, I learned in Porto Rico. I arrived from Arroya in the harbor of Ponce, August 13. Rumors of peace were rife for a number of days.

The *Herald* dispatch boat, then in the harbor, got up steam at about 3 o'clock in the afternoon. Soon the little craft put to sea, and I watched its course with intense interest. I said to my friends, if the boat, after leaving the harbor, turns in the direction of Arroya, it means war; if in an opposite direction, toward New York, peace has been declared. The proud little steamer turned its nose toward the United States and made a bee line for New York. It was not until the next morning that the welcome news reached headquarters. This is only one of the many instances in which the reporters came in possession of the latest news before they reached the officials. The reporters were also instrumental in exposing many irregularities and defects of the military service from headquarters in Washington to the seat of war. I have no doubt that many wrongs were corrected under the pressure of the press.

It is not strange that many of our influential newspapers went a little too far in representing the grievances of the soldiers and in criticizing the action of departments and officers. A tinge of sensationalism is common more or less to all of our great dailies. Interviews that never occurred will continue to appear as long as the reputation of a reporter depends largely on his ability to satisfy the cravings of morbid curiosity. The statements made to reporters are always susceptible to more or less reconstruction. Again, it must be remembered that some men in the army, as elsewhere, are likely to exaggerate the true conditions, believing that by doing so, their services will be the better appreciated. As the result of my own observations, I can say without fear of contradiction that the best soldiers do the least grumbling. The most heroic and patriotic soldiers have the least to say of what they did and in relating hairbreadth escapes. It is the drone that does the complaining, and who rides in ambulances, and overcrowds the hospital, and puzzles and vexes the hard-working doctor. To the credit of the armies of invasion I must say that I heard but few complaints when the days were darkest and the food scantiest. One day I visited the fever camp near the division hospital of the army before Santiago, where I found two hundred patients literally lying in the mud, with nothing but a wet blanket, most of them under a shelter tent, some of them even without this slight protection against the pouring rains. Food was of the plainest kind, yet little or no complaint here. The men expected hardships, and when they came they were not disappointed. Grumbling became more marked and widespread with the progress of the war, after the men had become worn out by the campaign, and homesickness had gained a firm foothold. The severest complaints have originated with camp followers. The Medical Department has been criticized repeatedly, and yet it would be found very difficult to find among the returning soldiers any one who would be willing, or who would have reason to complain of the treatment he received at the hands of medical officers. In case of war, the machinery of our government is a very complicated one. The executive power of the Surgeon-General is indeed an extremely limited one. Everything of importance has to pass through the hands and by sanction of the Secretary of War. The Secretary of War is a busy man in keeping track of what is going in his department outside of the Surgeon-General's office. On the other hand the Medical Department depends entirely on the quartermaster's department in forwarding and distributing medical supplies. No wonder that many collisions between these departments occurred during the present war. Our experience has taught us in a most forcible way that the Medical Department should have charge of everything pertaining to the sick and wounded, in order to accomplish that for which it is intended. The Secretary of War is not supposed to have any knowledge of medicine or surgery or other wants of sick and wounded, and yet the Surgeon-General is powerless in the execution of his orders without his co-operation. If the forwarding and distribution of the medical and hospital supplies were directly under the control and management of the Medical Department we would have heard less of well-founded complaints of the scarcity of medicines and hospital supplies. To make a department strong and efficient it must be independent. It was not difficult to foresee when this war broke out that the greatest danger the troops had to expect was disease and not the Spaniards. The importance of the Medical Department was never more keenly apparent than at the present time, and yet what was done? The highest official in the Medical Department is a Brigadier-General, and only five medical officers with the rank of Colonel, and seven Lieutenant-Colonels. For the army major-generals were in abundance, brigadier-generals by the dozen, and colonels were turned out by the hundreds. Many of the brigadier-generals in brand new uniforms and glittering staffs never found a command, but their names remained on the pay roll just the same. Many of our newly fledged colonels could not handle a musket to save their lives and some of them even attempted the unusual feat of mounting the horse from the right side. In the face of all these appalling defects of army service the brunt of criticism continues to fall on the Surgeon-General and his hard working officers in the field. Much has been said of the mismanagement of Camp Wikoff. Considering the limited transportation facilities, and the fact that in less than three weeks more than 3,000 patients have been cared for, it is a source of gratification that so much has been accomplished, largely through the energy of the Chief Surgeon, Colonel Forwood, and Majors Brown and Heitzman. A corps of more than one hundred female nurses, including fifty Sisters of Charity, do the necessary nursing with a will and efficiency that astonish the many visitors. The hospital tents go up like mushroons, day after day, and at the present time 2000 patients are well sheltered and well cared for. No lack of medical supplies at this time. The surgical ward in my charge was completed today and is already crowded with patients. The liberal contributions sent here by different relief societies supply the sick and well with an abundance of delicacies of all kinds. The diet of the convalescents is luxurious, much better than what is furnished by the officers' mess. The Red Cross is doing excellent work here, as elsewhere, in the distribution of clothing, medicines and delicacies. Mrs. A. Tscheppe, who represents a relief society of New York, is a familiar figure among the soldier patients and has been of much service in adding to their comfort and speedy recovery. Most of the patients are suffering from malaria, typhoid fever or dysentery. The number of deaths average from ten to fourteen daily, a small percentage considering the number of patients in the whole camp. The patients here enjoy fresh air, good nurs-

ing and excellent treatment, all of which will be conducive to rapid recovery. The conditions here for the successsul treatment of the fever cases are, in my opinion, far better than in any of the large hospitals in cities. It is to be hoped that the entire camp will be vacated in from four to five weeks, as after that time the soil will be thoroughly infected, in spite of all precautions, and the indigenous spread of typhoid fever would follow as an unavoidable sequence. The surgical work consists in the treatment of large abscesses, occurring in patients whose general health has been undermined by disease, or the hardships of the campaign, and operations for hemorrhoids and rectal fistula. Unjust and unnecessary criticism has a demoralizing effect on those directly or indirectly concerned. It is prone to intimidate and confuse those who are criticised and embolden those who look for undeserved sympathy. In this camp there is no further ground for complaint of any kind. It is generally known that the Medical Department was not consulted in locating the camps. For reasons known only to those in power, the camps were selected regardless of sanitary conditions. Our troops have been exposed to malaria since they left the State camps, and almost every man shows evidences of more or less malarial poisoning. As the essential cause of malaria enters the body by inhalation, malaria could not be avoided as long as the camps were located on a soil which breeds the plasmodium. Typhoid fever made its appearance in the State camps and followed the army to Chickamauga, Tampa, Alger, Cuba and Porto Rico. It is a repetition of what has happened during all campaigns under similar circumstances. Let the national cry subside now and let the press and people await the results of a thorough investigation by Congress, which will place the responsibility for any mismanagement where it belongs. The Medical Department courts such investigation, fully confident that the blame will be fixed outside of its legitimate jurisdiction.

Camp Wikoff, Aug. 31, 1898.

OUR RELIEF SOCIETIES.

BY N. SENN, LIEUT.-COL. U. S. V.
CHIEF OF OPERATING STAFF WITH THE ARMY IN THE FIELD.

War, pestilence, famine, floods and other great national calamities, are the most reliable tests to bring out the true philanthropic spirit of individuals as well as of nations. The good Samaritan is to be seen everywhere under ordinary conditions on his errands of mercy, following the footsteps of his Master in bringing comfort to the poor, the sick, the maimed and the oppressed, but his energies are taxed to the utmost, and his work is appreciated most keenly, when the masses are in distress. The American people are noted for their charitable disposition, and have gained a well-deserved reputation for humanitarian work. Our numerous ideal charitable institutions speak for themselves. Many national catastrophes have demonstrated the liberality and good-will of our people. The War of the Rebellion furnished an interesting object lesson to the outside world of the way in which patriotism is estimated here. During the war just ended many different relief societies have rivaled with each other in supplying our soldiers, sick and well, with many comforts of life beyond the limit of the government supplies. The government itself set a noble example by sending to the camps and the invading armies all kinds of supplies, unparalleled in quantity and quality in the history of the country. I am sure no one regrets more keenly than the government officials that these liberal supplies did not always reach their destination in time. The work of the many auxiliaries corrected many of these defects. Individuals as well as organized societies have labored incessantly and faithfully in coming to the aid of the government, in furnishing the troops with underclothing and delicacies usually beyond the reach of armies when engaged in active warfare. Miss Anabel Clarestes, a little girl in Lagrange, Ill., has been busy ever since the war commenced in preparing and sending to camps and the front home-made jellies, the product of her own hand. She had no difficulty in collecting money to purchase the necessary materials, but it was left for her to labor in the humble kitchen to prepare the incomparable delicacies for the soldiers in the field. This little American girl is a heroine worthy of the praise and admiration of the returning heroes who have been benefited by her modest, unselfish work. Many a patriotic woman, unknown to newspaper notoriety, has done her share in minimizing the sufferings of this war. It was not an uncommon thing for officers to receive a box containing the contributions of some female friend of the army who sent all she could spare for the alleviation of the troops in the field. In many such instances the name of the benefactress remained unknown to those who benefited by her donation. I have opened many such boxes, containing as a rule underclothing, bandages, reading and writing material, towels, handkerchiefs, and a few jars of jelly or canned fruit. The soldiers who were made the recipients of these gifts felt that they were remembered at home, an assurance which contributed much in intensifying their patriotism and in sustaining their courage under the most trying circumstances. The intense interest manifested by the government and the people in the care and comfort of the returning army remains unequaled in the history of our country. Every soldier was met with a reception given to an intimate and long-looked-for friend. The sick received the most tender care from all sides, and the well were given food that reminded them that they had reached home. The hospitals and many private houses threw the doors wide open to receive those who required medical treatment. Transportation home was made easy and comfortable by the active intervention of thousands of friends who were strangers when the troops left for the seat of war. In all large cities committees were organized to look after the comforts of the returning troops. In short, it may be safely stated that no army ever received a more enthusiastic, kind and cordial reception than the troops that have reached us from the seat of war.

RED CROSS SOCIETY.

Miss Clara Barton, President of the American Red Cross Society, has performed her onerous duties during the entire war with a devotion and earnestness that merit universal recognition at home and abroad. She has been tireless in her efforts to bring comfort to the soldiers at times when her services were most needed. The *Texas* and the little steamer *Red Cross*, under her command, made their appearance at Siboney at a time when outside help was most appreciated. Ice, medicines, dressings and hospital supplies were freely distributed among the sick and wounded.

After the surrender of Santiago the *Texas* was the first vessel to enter its harbor on its errand of mercy in bringing food for the hungry Cubans and delicacies for the sick of the victorious and vanquished armies. The Red Cross Society established supply depots in all of the large camps and the good work done everywhere will live in the memories of all who were engaged in the conflict. Miss Barton has the confidence of the American people and she has sustained it through the present war by the thoughtful and timely distribution of the innumerable and liberal donations to the society she so well represents. An appropriate idea of what this Society has done can be gained from the fact that in Camp Wikoff alone two thousand dollars of supplies are distributed daily. Miss Barton has been assisted in her widespread humanitarian work by a large staff of physicians and nurses who came to the relief of the medical officers at times when their services were most needed. After peace was declared, Miss Clara Barton immediately sailed for Havana to bring much-needed aid to the starving reconcentrados of the long-besieged city, while her numerous helpers continued their faithful work in the home camps. The work of the Red Cross received the moral and substantial support of the charitably disposed citizens throughout the United States and liberal donations from abroad. Recent experience has again demonstrated that this society is the most important auxiliary in war as well as other natural disasters in bringing prompt relief to the sufferers.

WOMEN'S PATRIOTIC RELIEF ASSOCIATION, NEW YORK.

This benevolent Association has extended its work from the camps to the needy families of soldiers who enlisted and went to the front, leaving families behind them, worthy objects of well-deserved charity. It was founded in the City of New York at the outbreak of the war, at the residence of Mrs. Egbert Gurnsey, with Mrs. Howard Carroll as president and well-organized committees and advisory board, consisting of prominent business and professional men. The Association has provided food and house rent, as well as medical attendance, monthly, to no less than 2444 families. A free eatinghouse was established at 711 Eighth Avenue, where these families received food and clothing. Mrs. Charles Carroll, a member of the Association, was made president of the Naval Reserve Relief, and by contributions and a garden party given at her residence in New Brighton, Borough of Richmond, the sum of $2500 was secured, which was expended for the benefit of the New York Naval Reserves. This special function of the Association did much for the comfort and efficiency of this otherwise neglected branch of the military service. The hospital work of the Association has been under the management of Mrs. Charles Carroll, Mrs. Adolph Tscheppe and Mrs. Seymore. The ladies of the Association, with Mrs. William McDonald as chairman, gave an outing to the convalescent soldiers from the different hospitals in Central Park, which proved to be one of the most memorable occasions in the annals of the history of this famous park. Mrs. Charles Carroll and Mrs. Tscheppe erected a tent in Camp Wikoff when the soldiers from Cuba commenced to return, and have been busy in distributing without any red tape an enormous amount of most valuable contributions among the sick and convalescents. Their donations of different stimulants and artificial waters have proved most acceptable and timely. From this tent ice cream has been furnished daily. A special messenger has done excellent service in distributing mail and in looking up soldiers inquired after by anxious relatives. So fertile have been the resources of this modest little tent that it has been designated "The Gold Mine." Mrs. Tscheppe represents the ladies of the "Liederkranz," and her popularity among the Germans of New York has brought not only the most liberal donations but likewise cash in large amounts. Only the other day she received from a single source a check for $500, which she was asked to use at her own discretion in the care of the sick and convalescent in the camp. The German press of New York has used its influence in supplying Mrs. Tscheppe with ample means on her errands of mercy.

ILLINOIS ARMY AND NAVY LEAGUE.

This relief association was organized soon after war was declared. It is composed of representative men and women throughout the State of Illinois, with headquarters in Chicago. The secretary, Dr. F. H. Wines, had an extensive experience in dispensing charity throughout the War of the Rebellion, and was consequently well prepared in assuming the laborious and trying duties of his office. While it was the principal intention of the association to look after the interests and comforts of the State Volunteers, many of the contributions reached soldiers outside of the Illinois troops. The State of Illinois, and the City of Chicago in particular, have been very active in minimizing the inevitable sufferings incident to active warfare by sending to the camps and the front large quantities of the most desirable articles of diet, delicacies, underclothing and medicines. The League made special arrangements for transportation at reduced rates, so that the donations reached their destination promptly and at small expense. The League has had from the very beginning a handsome bank account, and cash was sent to different points for the purchasing of the most necessary articles. The citizens of Illinois will have the satisfaction of showing that by concerted action of the members of the League the work of charity and benevolence has been accomplished in the most satisfactory manner.

MASSACHUSETTS VOLUNTEER AID ASSOCIATION.

There has been an impression prevailing among the regular troops, that while the soldiers of the regular army have fought the hardest and have been subjected to the greatest privations, they have not received the recognition to which they are entitled, and have been more or less ignored by the different relief associations. There is undoubtedly some truth concerning these statements. The Massachusetts Volunteer Aid Association has recognized the validity of this complaint, and has directed its surgeons toward correcting the oversight. The work of this association in this direction has been particularly notable in Camp Wikoff. A number of ladies representing this Association came to the camp, and have done all in their power to render the soldiers belonging to the regular army comfortable and happy.

A light diet kitchen was established, provided and equipped at the First Division Hospital, in charge of Major Wood, in conjunction with the Red Cross Society, under the superintendency of Mrs. M. H. Willard. The kitchen is an ideal one, and is presided over by a competent chef. Mrs. Dininger is the lady mana-

ger. The bountiful donation for the sick of the Regular Infantry Division was brought to the camp by Mrs. Leach, wife of Major Smith S. Leach, of the Engineer Corps of the Regular Army, and was contributed by the ladies of New London, Conn., and the Pequot Society. It consisted of a well-assorted collection of soups, eggs, lemons, oranges, butter, crackers, sugar, barley, cocoa, farina, beef, ham, corn-starch, codfish, breakfast food, chocolate, gelatin, tobacco, pipes, keg of whisky, writing and reading material, towels, pajamas, night-shirts and underclothing. The light-diet kitchen is one of the attractions of the camp. The relief societies that I have mentioned are only a few of the hundreds organized throughout the United States for the same purpose, notably among them the "Daughters of the Revolution" and the "Colonial Dames," all of which did their good share in alleviating the sufferings of our army in camp and at the front. The charity that has been practiced so bountifully and so generally during the present war, must satisfy our victorious army that the patriotism they carried into the field has been cultivated at home in words and action to a degree and extent unparalleled in the history of the world. War in a just cause begets patriotism, and nothing can demonstrate this more clearly and forcibly than our experience in the field and at home during the last five months.

Camp Wikoff, Sept. 8, 1898.

SOCIETY PROCEEDINGS.

Society of Ophthalmology of Paris.

Meeting of July 7, 1898.

[Translated by DR. FLAVEL B. TIFFANY, Kansas City, Mo.]

M. BOUCHERON, vice-president, in the chair.

M. A. DARIER presented a paper on

SOME THERAPEUTIC INDICATIONS FURNISHED BY THE BACTERIOLOGIC EXAMINATION OF CONJUNCTIVAL SECRETIONS.

Several years ago, a short time after the works of Neisser, I made a series of researches in the endeavor to determine under what conditions the gonococcus produces the grave, virulent form of ophthalmo-blennorrhea. During two years I submitted to microscopic examination the secretion of almost all the conjunctivites who presented themselves at the clinic of my master, Abadie. I was able to acquire thus the conviction that there is no true purulent ophthalmia without gonococci but all gonococcic ophthalmias are not equally virulent. There are involved special questions of individualities both on the part of the patients as well as upon the part of the microbes themselves. Now the microscopic examination gives us only an approximate indication, which, moreover, the clinical observation, for a long time practised, procures us in a degree equal if not superior. So for several years I have renounced as a basis for therapeutic indications, the searching for the pathogenic microbes from the secreting affections of the conjunctiva. I would not say as much of the pseudo-membranous conjunctivitis in which the serotherapie is of a wholly different action, according to whether one has to do with the Loeffler bacillus or with streptococcus. Now at this moment I am very greatly interested in the study of the therapeutic efficacy of a new salt of silver, the protargol. The results which I have obtained from this agent are so favorable that I could only confirm the conviction by bringing irrefutable anatomic and clinic proofs, so I caused to be undertaken by Mr. Valengon, my chief of clinic, a series of microscopic researches for confirming the diagnosis clincally put forth. From these studies, which will very soon be given, in an inaugural thesis, I can already draw the following conclusions, which are, moreover, the very same which I had already put forth from simple clinical observation.

1. Acute catarrhal conjunctivitis characterized by the presence of the bacilli of Weeks is cured generally in two or three days by the daily cauterizations of protargol.

2. Subacute conjunctivitis with diplobacilli (of Morax) is at first rapidly ameliorated; but relapses are so much the more frequent in proportion as the time between the cauterizations is extended. Moreover, at the end of a certain time, it comes about that, as with the nitrate of silver, a sort of accustoming to it, and the action of the medicament becomes, so to say, null and void. It is necessary to change the treatment. Following Mr. Morax, I have tried the sulphate of zinc, but I have not been very well satisfied with it. On the other hand I have been well pleased in these cases with the use of the acetate of lead, and with ichthyol 1/10 whether in solution or pomade.

3. Gonococcic purulent conjunctivitis seems to be the affection called upon to draw forth the most brilliant results from the protargollic medication. I sought to give the reason for this in two previous works. (See the Clinique Ophthalmologique, 1898, Nos. 1 and 6.) Up to this time in all the purulent ophthalmias which I have treated for seven months by protargol I have not seen one in which the suppuration has not been dried up at the end of a few days by bi-daily cauterizations, and that, too, in the most virulent forms. But if one ceases the treatment before fifteen days the suppuration reappears.

4. In two cases of acute pseudo-membranous conjunctivitis, non-diphtheretic, the protargol, contrarily to nitrate of silver, has led in three or four days to a complete disappearance of the false membranes. What effect would be obtained in the forms truly diphtheretic? I shall occupy myself ultimately with blepharo-conjunctivitis with trachoma and with dacrycystitis.

Mr. VALUDE—Gonococcus does not always produce the same form of ophthalmia. I observed lately in a family of five cases one only presented a grave purulent conjunctivitis, the others were only affected in a slight degree, and all, nevertheless, had gonococci in the secretions. It is then very important to find a means of diagnosticating the gravity of the affection, and this is what I hope to find in the researches of Dr. Darrier.

Mr. SULZER—The gonococcus is not the sole agent capable of producing purulent ophthalmia, as the remarkable descriptions of Larrey on the subject of Egyptian ophthalmia (seasonable or climatic gonococcus) prove.

Mr. PARENT—I am surprised that Mr. Darrier employs still in certain grave conjunctivites (and consequently susceptible to ulcerations) the solution of acetate of lead, which exposes to metallic deposits not only upon the ulcerated parts but even in certain cases upon the conjunctiva, where it is deposited under the form of little grainy particles. Then, too, when our therapeutic arsenal is so rich in astringent and caustic substances, of what use is it to employ acetate of lead, which presents such inconveniences? When one speaks of purulent conjunctivitis, it is necessary in point of view of the gravity and the efficacy of treatment to make a difference between the adult and the baby. In general the latter is less grave and not so liable to corneal complications. It is then, for the more rapid cure of blenorrheal ophthalmia of the adult that we must establish the superiority of protargol over other treatment, and especially over nitrate of silver. For, as to purulent ophthalmia of the baby, one may cure it (if the child is cared for immediately) by many different medications, and that with sensibly the same results. Another important point to know is the following: Does it dialyse or diffuse in the conjunctiva more deeply than nitrate of silver, and above all than of silver (naissant)? An excellent therapeutic agent recommended about fifteen years ago by Dr. Sedan, the iodid of silver (naissant) is formed in the cul-de-sac, even by the double decomposition of alkalin, iodin and salt of silver introduced into the cul-de-sac, by means of two glass bipets. In the point of view, especially, of the dialysis or of the thorough penetration of the deep layers, this iodin d'argent (naissant) presents some advantages, and I call the attention of Mr. Darrier to it that he may experiment comparatively with protargol.

Mr. SPEVILLE—I have employed protargol only in catarrhal ophthalmia, and have obtained excellent results from it in such cases. Purulent ophthalmia of the new-born is not so benign as M. Parent would have it, and for that I have seen recently two cases of babes treated with free washings with permanganate, who came back to me with both corneæ quite gravely compromised.

Mr. MORAX—It is very easy to convince one's self that all conjunctivites with purulent secretions are not due to gonococcus. The conjunctivitis produced by the bacillus of Weeks often presents a purulent secretion. It may even be accompanied by corneal lesions, as I have demonstrated, and on this subject I recall the case of a patient who had been attacked by an intense, acute contagious conjunctivitis with the bacillus of Weeks, which presented from the very first days of affection, and before the beginning of treatment, quite a grave corneal lesion, since it left after it a central leucoma, and M. Darrier had to make ultimately an optical iridectomy. The eyes of this patient had objectively the aspect of a purulent conjunctivitis, but I repeat we had not to do with the gonococcus, but with the bacillus of Weeks. I believe that I have demonstrated that the classification of conjunctivitis based

solely upon the objective aspect of secretion was erroneous. We may make clinical diagnosis of the different conjunctival infections, by basing not only upon the objective aspect of the inflammation (as has been the custom), but also upon the commemoratives, the evolution, in other words, upon the whole assembly of the symptoms and not upon one single sign, so variable as the aspect of the anatomical lesion. I am surprised that Mr. Darrier has not succeeded in curing subacute conjunctivitis by sulphate of zinc. The solution 1/10 has the disadvantage of provoking a quite intense irritation, but the patients who can tolerate it are rapidly cured. In very sensitive patients I replace it by the pomade of ichthyol. I have only a very short experience with protargol, which, in subacute conjunctivitis seems to me to be insufficient, as likewise nitrate of silver.

Mr. KOPFF—I rise to support what Mr. Parent has said on the subject of the danger presented by the salts of lead in ocular therapeutics. I have also had opportunity of seeing a certain number of patients treated by acetate of lead, who presented some plumbic incrustations upon the cornea and conjunctiva. In presence of results of this kind we must consider acetate of lead a disastrous agent and proscribe it from our therapeutics. As to protargol, I have not experimented with it, but I ask myself why we seek other medicaments when we have nitrate of silver at our disposition, which is the true specific of purulent ophthalmia of infants. I have had the opportunity of seeing a great number of purulent ophthalmia of infants in the clinic of Mr. Galezowski, who treated them all by his method of bi-quotidian cauterizations with nitrate of silver 1/10. The results are always rapid and excellent; cure is the rule when the infants are brought at first, before corneal complications. I employ, also, at St. Joseph's hospital, Dr. Galezowski's method, and I have only to congratulate myself with its results. That is why I do not see the necessity of seeking other medicaments, since the nitrate of silver, well and timely employed, has as sure action as possible. Has Mr. Darrier employed protargol in blenorrheal ophthalmia of adults?

Mr. DARRIER—If I have not entered upon more details concerning different pathogenic agents of conjunctivitis it is because I wished to confine myself to the province of daily practice. I know that purulent ophthalmia may be provoked by other microbes than the gonococcus; but today, clinically, three forms of conjunctivitis are established, they are: Blenorrheal ophthalmia; acute catarrhal conjunctivitis of Weeks, which, as Mr. Morax told us, may be accompanied by ulceration of the cornea, and finally sub-conjunctivitis with diplobacilli of Morax. It is upon these three forms only that my actual work bears. I reserve for later study, diphtheritic conjunctivitis, trachoma, etc. Certainly, I would not arraign nitrate of silver. We ought to have for this product the gratitude which we owe to an old servant who has rendered us signal services, in spite of his faults, with which we have in the end familiarized ourselves. But it is of the debutants, of those who do not yet understand the delicate handling of this agent, caustic in the highest degree, that we must ask their opinion on this subject. Many of them will reply to us that it is a sword with two edges, which may do as much harm as good. How many corneal ulcerations, how many productions of conjunctival false membranes have had for real cause cauterizations too energetic and too untimely? Well, these inconveniences do not exist with the proteinit of silver. The solutions of this salt form a mucilage, the more onctious, the more they concentrate. Applied upon the mucous membranes, there is very little irritation, as they do not coagulate the albumins, neither are they precipitated by them; they impregnate and penetrate the epithelial cells, carrying into the depths of the tissues the bactericidal action of the argentic preparations. Nitrate of silver, on the contrary, applied upon the conjunctiva produces a destruction of the epithelium, while at the same time it is precipitated from its solutions, which limits its action to the surface of the mucous membranes. I have given up entirely weak solutions of protargol, and I no longer employ for cauterization with the brush any except the following solution: Protargol 5 gr., distilled water 10 gr. Let it dissolve spontaneously. This solution is of syrupous consistency, adheres to the brush, and does not drop upon the linen and upon the vestments. The cauterizations are made once or twice a day, and in the interval I instill three or four times, one or two drops of collyrium, 5 per cent., in order to sustain and prolong the effect of the cauterization made with the brush. Thanks to this treatment, regularly and promptly applied, all the conjunctivites due to gonococcus and to the bacillus of Weeks will be promptly cured; those, on the contrary, which are due to the diplo-bacillus of Morax will be rather respondent to the sulphate of zinc or to ichthyol. For my part, I think that until the discovery of the anti-gonococcic serum we must consider the salts of silver as the most active against purulent ophthalmia, and it is our duty to seek that which with an equal efficacy shall present the greatest innocuity.

Mr. BOUCHERON—Is it the silver which acts specifically; is it the acid of the salt? According to what we have just heard said by Mr. Darrier, it would seem that the protargol, which is not painful, would act everywhere by contact rather than by depth (penetration).

Academy of Medicine, San Francisco.

At the meeting for the month of August, Dr. J. Henry Barbat presented a case of tubercular peritonitis in a child of fifteen months. The child had exhibited only the symptom of abdominal enlargement with ascitis. The fluid was not freely movable in the abdomen, but was sufficiently so to indicate its presence. There had previously been a neoplasm of the skin on the chest, posteriorly, which had been removed when the child was about nine months old; this showed a microscopic appearance strongly resembling sarcoma. There was a difference of opinion as to whether the abdominal tumor was a sarcoma of the spleen, or abdominal tuberculosis. Operation revealed the nature of the disturbance. Three months after the operation the child was still doing well. Dr. Douglas Montgomery said that he had seen this child in consultation before the neoplasm was removed, and had examined specimens of the mass and found they were very much like sarcomatous tissue. He was therefore of the opinion, when he again saw the child after it had developed the abdominal trouble, that the latter was caused by a recurrence of the growth previously noted on the skin. Dr. E. E. Kelley reported a case of similar trouble occurring in a child three and one-half years of age, on which he had recently operated, but without so good a result as in the case of Dr. Barbat. The case of Dr. Kelley was, however, somewhat different in that in Dr. Barbat's there was a considerable amount of ascites in the abdomen, but in his case there was practically no ascites, the disease being of the fibrous variety and the whole abdominal viscera were practically glued together. The peritoneum was thickened as much as an inch in places by this fibrous material. The feces, examined for some days before the operation, showed tubercle bacilli in very great numbers. As in Dr. Barbat's case, the abdomen was treated to a stream of oxygen while open, but the result was as bad as had been expected, for the child died on the following day. Dr. Montgomery reported that he had examined some of the tubercles in the case reported by Dr. Barbat, but that he could not find any tubercle bacilli; this did not show that there were no bacilli there, but that they were few if present. Dr. H. M. Sherman mentioned a somewhat similar case that had occurred in his practice recently. There was slight enlargement of the abdomen, somewhat disturbed digestion, slight temperature, but no tumor and no ascites. For some time he was of the opinion that he had to deal with a case of disturbance resulting from intestinal infection, possibly due to malarial poisoning. On consultation the question of tubercular peritonitis was raised and it was decided to open the abdomen. The condition was found to be one of miliary tuberculosis. Dr. Dudley Tait mentioned two cases which had been operated on for some other cause, and the peritoneum found on examination to be the seat of tubercular peritonitis. Both cases did well after the operation. He called attention to the great discrepancy between the findings of this disease at operation and on postmortem, and was inclined to believe that many cases of so-called tubercular peritonitis were self-limited and had a tendency to spontaneous cure. He mentioned some recent experiments on animals as to the absorptive action of the peritoneum and its relations to germs of disease, the experiments going to show that the peritoneum has a very strong tendency to throw off bacilli. Dr. Kreutzman was of the opinion that the question of diagnosis was not made sufficiently clear, and that a large number of cases reported as tubercular peritonitis were really something else. He certainly found that where there were tubercles containing tubercle bacilli, the disease proved inevitably fatal, but where there were simply tubercles without the presence of bacilli, opening the abdomen would often produce a cure. The pathology, he urged, should be more clearly studied and all efforts made to eliminate the doubt which was now present when the diagnosis of tubercular peritonitis is mentioned. Dr. MacMonagle said that in his opinion these cases were often benefited but never cured; that the tubercular condition once established, the fatal termination was inevitable. The simple operation of opening the abdomen was followed by improvement for from five months to eight years in his cases, but in no case had he noted a cure. He recognized two distinct classes

of the disease; one with ascites, miliary tubercles, and few or no bacilli to be found in the tubercles; the other, with no ascites, the formation of large amounts of fibrous tissue in the abdomen and the presence of bacilli; while the former class was usually much improved by opening the abdomen, the latter class of cases did not benefit from this proceedure. With Dr. Kreutzman, he believed that the diagnosis was by no means always clear, and that tubercular peritonitis was frequently given as the diagnosis when careful pathologic investigation would show some other etiology. Adults did better after operation than children. Dr. Kreutzman reported a case of "Diabetes and Carcinoma of the Uterus." He first reviewed the recent literature on the possible connection between the two diseases. There may be three explanations of the occurrence of these diseases together in some subjects; the diabetes may be the cause of the disease in the reproductive organs; it may be the effect of this disease in the uterus or adnexa; the diabetes may simply occur in a patient already having some disease of these organs. After considering these three possibilities, he reported a case of a woman of 60 years who had been referred to him some time ago. He found that she was voiding large amounts of sugar in the urine, and that there was evidently a carcinoma of the cervix and of the body of the uterus. On diabetic diet and treatment the amount of sugar rapidly decreased. Operation was decided upon, and the uterus removed by the vagina, the abdominal route not being chosen for the reason that more time was required in that case, and the diabetic condition contraindicated a long anesthesia. Recovery from the operation was very rapid and satisfactory, and three days after the operation the sugar disappeared from the urine and was not again present, except at rare intervals and in small amounts, for the remainder of the patient's life. The disease recurred in the right broad ligament about six months after the previous operation and was rapidly fatal. The operative feature of the paper was discussed by Dr. Huntington of Sacramento, and Dr. MacMonagle of San Francisco.

PRAGTICAL NOTES.

Dilute Caustic Potash in Lupus.—This dressing has been found so effective by Unna that he now recommends it as superior to all other dressings used to date. It never smarts, and the beneficial effect is actually remarkable in some cases.—*Semaine Méd.*, July 20.

Application of Formol.—To preserve and harden the central nervous system with formol in situ, insert a trochar in the nasal cavity, open through the lamina cribrosa, and introduce the formol through this passage.—*Munich Med. Woch.* from *Deutsche Arch. f. Klin. Med.* x, No. 5.

Gall-stone Diagnosis.—The *Deutsche Med. Woch.* of August 4, contains a communication from Czerny's clinic stating that in forty cases of gall-stones tested (with one exception), the amount of sugar in the urine was more than normal—0.4 per cent. and over—and fell much below normal after the removal of the stones.

New Hemostatic.—The comelina tuberosa was prized by the Aztecs for its remarkable hemostatic properties, and the Mexican physicians have recently rescued it from the oblivion of ages. They find that it arrests epistaxis immediately, even in severe cases of traumatism, purpura hemorrhage, etc. Several observations are reported in the *Gaceta Méd.* of July 14.

Electric Conductibility of Antitoxin.—It has been established from a comparative study of normal horse serum and antitoxin that the freezing point, the osmotic pressure and the electric conductibility are all diminished proportionately to the amount of antitoxin contained. The electric test may therefore possibly prove useful in testing the curative value of antitoxin serum.—*Deutsche Med. Woch.*, July 7.

Gosio's Rapid Test for Arsenic.—The penicillium brevicaute grows with extreme rapidity and a penetrating odor of garlic in the presence of arsenic. Abba detected arsenic by this means in one hundred and fifty hides from India in less than twenty-four hours. He recommends it as the most rapid, certain and cheapest test we possess for the detection of arsenic.—*Munich Med. Woch.*, July 12.

Treatment of Trachoma with Iodin.—R. Roselli of Rome reports 78 patients completely cured out of 100, with nascent iodin generated by administering potassium iodid internally, and when the iodin begins to be eliminated in the lachrymal secretions, he paints the upturned lid with oxygenated water. Another method is to apply to the lid a 1/15 solution of the potassium iodid and then apply the oxygenated water. The generation of iodin causes a slight smarting at first, which passes away in a few seconds to five minutes.—*Semaine Méd.*, July 20.

Somatose in Syphilis.—In syphilis and mercurial cachexia somatose is warmly extolled by Professor Fournier in the *Journ. des Mal. Cut. et Syph.* for March. He has found it extremely effective in restoring strength and appetite in the anemic condition and nervous troubles that frequently develop in the course of syphilis. It is especially valuable in the anorexia caused by mercurial cachexia and in cases of ulcerative processes in the throat and mouth, preventing the ingestion of solid food.—*Vienna klin. Rundschau*, July 31.

A Useful Device.—A stand to use in applying casts and bandages to the pelvis, hips, etc., that has been in use a couple of years at Halle, has proved so satisfactory that it is described and illustrated for the benefit of others in the *Cbl. f. Chir.* of July 9. The patient's back rests on a solid wooden stool, 20 by 20 cm. and 30 cm. high, beyond which projects an adjustable support for the head. A tripod slides on a rod extending along the other side of the stool and the pelvis rests in a von Bruns' saddle mounted on this tripod. The body is thus supported in three places, while an assistant holds the feet. The stand can be adjusted to fit either a child or an adult.

Picric Acid Intoxication.—Picric acid is now used in certain industries, and intoxications from it are becoming more frequent. The principal symptoms are a yellow tint over the whole body and in the mouth, pain in the epigastrium, dryness of the throat, depression, anuria and continuous cephalalgia. In a case described by P. Schwarz in the *Vienna Klin. Rundschau* of July 31, a workman drank twenty grams, but prompt lavage of the stomach and intestines, with a diet of milk, white of egg and lemonade restored the patient. The prognosis is usually favorable; permanent disturbances have never been observed.

Irreducible Inversio Uteri.—Duret treats this with: 1, incision of the posterior cul-de-sac; 2, a median, posterior, vertical incision in the entire uterus from the vaginal incision to the fundus; 3, reduction of the inversion; 4, the incision in the uterus sutured down to the isthmus; 5, reposition through the vaginal incision, the lips of the incision protected by the forceps; 6, suturing the cervix from the isthmus downward. The vaginal incision is drained and left open, with gauze tampons inserted to prevent possible retroversion. His patient, a woman of 22, had no hyperthermia and left her bed the fifteenth day.—*Journ. des Sc. Méd. de Lille*, July 9.

Salicylic Acid and Salol in Pneumonia.—De Becker of Antwerp proclaims that salicylic acid will cure and abort pneumonia with no other medication. Besides its antiseptic action on the lungs, it liquefies and favors the expulsion of the sputa to a remarkable degree. He gives 10 cg. to children, every one or two hours, adults, 50 cg. every two to three, or three to four hours, watching the heart, and varying or suspending the doses as the desired results are accomplished. (Quoted in the *Cronica Méd.*, June 15.) R. Liegel also announces that he has been successful in curing seventy-two cases of pneumonia with salol, 8 gm. a day, always combined with 50 gm. peppermint water, 200 gm. water, and 5 gm. "bitter" or any other tincture. He gives a little ipecac to loosen the cough, with ice to the head when temperature rises above 39.5 degrees C.—*Vienna klin. Woch.*

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SATURDAY, SEPTEMBER 17, 1898.

SPLENOMEGALY WITH CIRRHOSIS OF THE LIVER.

In 1894 BANTI of Florence described a new type of disease, which has since been known as splenomegaly with cirrhosis of the liver, or as BANTI'S disease. The various instances of this disease which have since been reported, particularly in Italy and in France, now offer a good opportunity to study its principal clinical and anatomical features, and in a recent article BANTI[1] summarizes the knowledge of the disease.

As regards the etiology it may be said that the real cause is entirely unknown. The disease develops especially in young people and in the adult; as yet not more than one case has ever been observed in the same family.

The clinical course is divisible into three stages: first, the anemic; second, the transition stage; and third, the stage of ascites.

First there is noticed an enlargement of the spleen: in quite a few cases it has been demonstrated that this precedes all other symptoms. The spleen may reach a very considerable size; it has a smooth surface, rounded edges, hard, and, as a rule, it is painless. Then come symptoms of anemia of the usual character. The blood shows a corresponding diminution in the number of red cells and in the amount of hemoglobin; poikilocytes and microcytes have been observed, but nucleated red cells are said to be always absent. There is no leucocytosis, and the proportion between the different kinds of leucocytes is normal. There is no trace of swelling of the lymph glands. The temperature is usually normal, but occasional attacks of chills, followed by fever, may occur at irregular intervals. This stage of anemia usually lasts from three to five years, but it may run along for as many as ten years.

The transition stage is marked by changes in the urine, the quantity of which is diminished, while urates, urobilin, and often bile pigments, occur; a mild general jaundice develops; the digestive functions are disturbed. This period lasts only a few months and is followed by the stage of ascites, which develops slowly and painlessly. The liver diminishes in size. the jaundice increases, the general symptoms of anemia become worse; very often there is an evening temperature. The changes in the blood also increase and death usually occurs in from five to seven months.

The pathologic changes consist in, *a*, the enlargement of the spleen; the capsule is usually thickened; perisplenic adhesions are, however, rare. On section the surface is deep red, with whitish lines and round, white, and hard nodules, which correspond to the Malpighian bodies; and *b*, the interstitial process in the liver.

In the ascitic stage, the liver is small, granular and hard; in the transition stage the surface may be just a little uneven, and the organ of normal volume. BANTI has not yet had an opportunity of examining a case postmortem that died in the first stage, but in cases in which splenectomy has been performed in this stage, the liver presented a normal appearance. Ascites does not occur until the last stage. In all cases examined the splenic vein and the portal vein, from the mouth of the splenic vein to the liver, have been found covered with dried, elevated patches, very similar to the sclerotic plaques so often seen in the aorta. The lymph glands are healthy. In the third stage the gastro-intestinal tract presents the well-known changes characteristic of atrophic cirrhosis. The marrow of the long bones is red and lymphoid.

Histologic examination of the spleen has shown the following changes: A few Malpighian bodies have normal structure: in others the periphery is composed of normal cells, while the arteries are surrounded by a zone of varying width, sometimes occupying three-fourths of the extent of the body, which consists of thickened connective tissue with few nuclei. This connective tissue is homogeneous and hyaline, and presents small spaces or slits in which may be one or two compact nuclei. Toward the periphery of the body the spaces become wider and contain more cells; the connective tissue becomes thinner, and at last there is formed a coarse network which resembles somewhat the normal reticulum. The walls of the arteries in the Malpighian bodies have coalesced completely with this periarterial, hyaline, fibrous tissue. The extent of the sclerotic zone is greater the further the disease has progressed. In some cases entirely fibrous nodules are found, which represent sclerotic

[1] Splenomegalie mit Lebricirrhose, Ziegler's Beiträge, xxiv, p. 21, 1898.

Malpighian bodies. These changes begin around the arteries, as has been demonstrated in the spleens from early stages of the disease, and they consist, as will have become clear from this brief description, of a hyaline degeneration of the connective tissue. Irregularly-shaped, larger and smaller hyaline scales have also been observed, but their source and nature are not explained; in some cases thrombosis of the vessels of the Malpighian bodies has been found. In the pulp the veins present, in the early stage, large cells upon their intima, so that the venous channels look in cross-section somewhat like gland ducts. Similar cells may occur in the reticulum around the veins. The network of the pulp is thickened, fibrous, of hyaline appearance, and the cells enclosed in the spaces are fewer than normal, but otherwise without any changes.

The principal changes then, in the Malpighian bodies as well as in the pulp of the spleen, consist in a marked increase in the thickness of the reticulum, while the peculiar structure of adenoid tissue remains; hence the lesion has been labeled fibro-adenia by BANTI. The exact genesis of this thickening has not yet been made clear.

In the liver there is the usual interlobular proliferation of fibrous tissue characteristic of the so-called alcoholic cirrhosis, but the process does not seem to reach the intensity of the latter disease. In the marrow of the long bones which presents the characteristics of fetal marrow, the number of nucleated red corpuscles is not very great.

BANTI has made numerous cultures upon a large number of different media, but without any results. Microscopic examination of the blood, the spleen juice, and of the tissues have failed to demonstrate the presence of bacteria or other parasites.

The only drugs which seem to have any influence for the better upon the disease are arsenical preparations, but the improvement is only transitory. In three cases splenectomy has been performed by COLZI in Florence. One patient died from independent puerperal complications; one young man recovered completely. He was operated upon in the anemic stage, the disease having then lasted about six years. The third patient, a woman, was operated upon between the seventh and eighth year of the disease. At the operation the liver was found somewhat granular, but the patient recovered completely, and twenty-one months after the operation she presented no symptoms of anemia, or of disease of the liver.

It is evident that this disease has nothing in common with LAENNEC's cirrhosis of the liver. On the other hand, splenomegaly with cirrhosis of the liver, in the anemic stage at any rate, presents great similarity to a disease which is known in the Italian and German literatures as splenic anemia. It might be claimed, for instance, that splenic anemia represented only a stage of splenomegaly. The exact nature of the so-called splenic anemia, and of another condition, or possibly the same condition under another name, namely splenic pseudoleukemia, remains very obscure, and the various conceptions of what is to be included under the term, or terms, are somewhat confusing, and BANTI is not able to clearly define the relation between splenomegaly with cirrhosis of the liver and splenic anemia or pseudoleukemia. The only decisive means of differentiation would have to be sought in the etiology of the processes, which is as yet completely unknown in all three.

BANTI looks upon a chronic intoxication proceeding from the spleen as the most reasonable cause of the anemia which characterizes this disease. This view he finds is supported by the fact that when the spleen is removed the anemia disappears. Furthermore, he looks upon the chronic sclerotic splenic and portal endophlebitis, which in the early stages is confined to the splenic vein, as indicating that poisonous substances are carried in the blood passing along this route. He regards the cirrhosis of the liver as a direct result of the disease of the spleen. If poisonous substances are elaborated in the spleen, then they are constantly carried through the liver and result in the end in hyperplasia of the connective tissue, in somewhat the same way as the poisonous substances absorbed from the intestinal tract in chronic alcoholism are supposed to produce typic atrophic cirrhosis. Finally, BANTI calls attention again to the fact that the only curative measure known is the removal of the spleen.

The literature concerning this interesting condition described by BANTI is not very extensive. In the bibliography attached to BANTI's article, which is presumably complete, there are only ten references. It is to be hoped that new cases may soon be described in American literature, and that the relation of splenomegaly with cirrhosis of the liver to splenic anemia and splenic pseudoleukemia may be more definitely established.

A NEW PATHOLOGY IN EPILEPSY.

Epilepsy, one of the oldest diseases of the nervous system of which we have knowledge, is, as regards its etiology, and particularly its pathology, practically but little known. The names given it by the Father of Medicine, "sacred malady" and "malady of children," show in what light it was regarded by the ancients. For centuries the most ridiculous and incredible theories were advanced by the best men of their time with truly commendable zeal; but real progress can not be said to have begun previous to the statements of reflex irritation advocated by MARSHALL HALL. Since then decided advances have been made along many lines, due especially to the magnificent work of HUGHLINGS-JACKSON, but even to this day authorities differ greatly as to causation in a vast majority of those afflicted. Age, sex, hered-

ity, insanity, organic brain disease, trauma, syphilis, chronic alcoholism of parents, must all be regarded as important considerations. Many curious facts in respect to etiology have been reported of late years; errors of refraction, especially astigmatism, are of common occurrence; compression of the carotids producing cerebral anemia; bradycardia; diabetes; the diminution of the toxicity of the urine previous to an attack; pressure upon an undescended testicle; all in a considerable number of instances by eminent observers. The rôle of trauma in the causation of epilepsy is too well grounded to be easily shaken, but undoubtedly too many cases are classed under this head. Almost every individual, whether epileptic or not, can give a history either known to himself or narrated by his parents or friends, of a fall upon the head during childhood or at some later period, and yet but a small proportion of the population suffer from epilepsy. Probably only a small ratio of epileptics, not over 2 per cent. could rightly attribute their affliction to this cause. There remains then the major portion of the sufferers, in whom the etiology of their affliction and certainly pathology, is obscure, that must be classed under the term—for want of a better—idiopathic epilepsy. For the clearing up of obscure points of this disease, too much attention has doubtless been directed to the nervous system, as is the case of insanity, with a passing over with but trifling consideration other pathologic conditions existing in the body.

For the study of epilepsy, both the clinical manifestations during life and the pathologic findings after death, there is probably no better place in the country than the Ohio State Hospital for Epileptics at Gallipolis. There are usually from six to seven hundred inmates, twenty to thirty of whom come to the autopsy table during the year. Lately a well-appointed laboratory has been fitted up, and the research work placed under the able direction of Dr. A. P. OHLMACHER. The latter, in his researches into epilepsy, determined to examine not only the central nervous system, but all other parts of the body as well, with the hope that some constant pathologic lesion might be found upon which statistics of some value could be compiled. His efforts have been crowned with considerable success, as demonstrated by his report in the *Columbus Medical Journal* of July 19, "The Persistent Thymus and Other Morbid Anatomic Peculiarities in Certain Cases of Epilepsy." His studies comprise eighteen cases, in eight of which more or less constant pathologic features were presented. All the victims were in the young adult period of life. Six of the eight were undoubtedly grand mal, therefore "idiopathic." A curious fact is that three of the eight died suddenly. One other committed suicide and one died of exhaustion after an attack of mania. Four of the eight had attacks of mania at more or less regular intervals. The summary of his findings can be perhaps best stated in his own words: "Persistent and enlarged thymus gland; a pronounced enlargement of the intestinal and splenic lymph-follicles; a more or less pronounced hypertrophy of the lymphatic glands, and the lymph-adenoid follicles of the tongue, larynx, trachea, esophagus, tonsils and even of the stomach; a narrowing of the arteries; an abundant development of fat; and certain osseous changes indicative of old rickets. Not all the abnormalities comprehended in this summary were present in a single case, though the persistent thymus, with one or several features added, was constant." OHLMACHER, in conclusion, calls attention to enlarged thymus occurring in two other conditions, namely, "laryngismus stridulous" and "sudden death in adults with no assignable lesion," and lays special stress upon the sudden death of his three epileptics, in all of whom it might again be remarked that the thymus was enlarged. He regards the "lymphatic constitution" occurring in these three affections and the sudden dissolution that appears so commonly as more than a mere coincidence. It is to be hoped that other institutions will direct their attention to the findings of OHLMACHER, so that the great pedestal for the successful treatment of any disease, a morbid anatomy, may in this most obscure of affections be founded upon a firm basis.

BLOOD EXAMINATIONS IN SURGICAL AFFECTIONS.

While medical men were glad to seize the opportunity of increasing the strength of their diagnoses by examination of the blood, the surgeon, until late years, has always held rather aloof, trusting more to the physical signs and constitutional reaction than to anything else. With the difficulty often accompanying the diagnosis of appendicitis, he at last became eager to accept any additional evidence that might be offered, and the hematologist has often been called upon for help. So frequent became these examinations in appendicitic affections that several important points, both in prognosis and diagnosis, have been fairly well established. As one would naturally expect, purulent appendicitis is usually accompanied by leucocytosis. This symptom is very common, and in a way may be looked upon as a good prognostic sign for this reason: If your diagnosis is reached by other symptomatology, and no leucocytosis is present, the prognosis is bad. The size of the leucocytosis is of some importance. A count in the neighborhood of ten thousand means that the purulent collection is walled off from infecting the general peritoneal cavity, that the case, even if no adhesions have formed, is a mild one, or, as hinted above, the patient is in a serious condition, the economy reacting very little if at all to the infection. The increase in the number of leucocytes may be looked upon as the massing of an army to resist invasion. On the other hand, a high leucocyte count is not necessarily a bad prog-

nostic sign; but this one point must be considered, whether or not there is a steady and progressive increase. This latter symptom is a dangerous one and urges instant operative interference. If after a leucocytosis has become stationary and, of a sudden with increased severity of the constitutional symptoms, we find a sudden increase or marked decrease in our count, we are safe in concluding that a purulent collection, once walled off, has burst its bounds and is invading the peritoneal cavity, the increase or decrease depending, as mentioned above, upon the reaction or the reverse of the system to the increasing infection. Many cases of appendicitis, especially where no tumor mass can be discovered, are confounded for a time with typhoid fever, on account of the abdominal pain and febrile reaction. In the early stage the Widal test would not be of much value, but the presence of a leucocytosis would be in favor of appendicitis, unless the typhoid were complicated with pus formation, in which case the count would give us no aid. If an attack of appendicitis is progressing toward a favorable termination, the number of leucocytes will fall steadily, so that the daily examinations of the blood in this disease are of the greatest service. The importance of a leucocyte count will be the more appreciated when it is taken into consideration that the presence of this symptom alone will differentiate appendicitis from the various forms of disease and colics accompanied by pain in the right iliac region. The one exception is pyosalpinx.

A problem that has been puzzling surgeons for many years is what to do in the condition known as "shock." Of course the causal factors must first be considered. The next important point is the question of concealed hemorrhage, so often the forerunner of shock. If we know that such hemorrhage be present the indication would be to in some way reestablish the normal amount of fluid in the arterial tree; and the best way of accomplishing this is by transfusion of the normal (six-tenths per cent.) saline solution. On the other hand, if shock is due to compression of the brain, transfusion would work in most cases irreparable harm. Whether or not blood has been lost in any considerable amount, can be absolutely determined by the blood count, in previously healthy subjects the number of red corpuscles and amount of hemoglobin being diminished in direct ratio to the amount of blood lost from the vessels. The leucocytes are diminished but a short time; with the slightest reaction on the part of the system, leucocytosis, both relative and absolute is soon induced. It is astonishing what an enormous amount of blood can be lost from the general circulation before death supervenes. DACOSTA says that one-half of the blood can be lost before fatal syncope comes on. MIKULICZ, than whom no surgeon is better authority on hematologic subjects, advises never to undertake operation "when the hemoglobin is under 30 per cent.," so that it is probable that he has had cases in which the blood has been below the limit of DACOSTA, and yet not have perished immediately.

In malignant disease, blood counts and examinations have been reported without number. Until lately, however, not much of any practical diagnostic value has been offered. It has been known for some years that after an operation of any magnitude, involving the loss of some blood, some time elapsed before the hemoglobin percentage began to rise. This interval of time was known as the "regeneration time" and was usually reckoned between two and three weeks. In malignant diseases, as demonstrated recently by BIERFREUND, it is fully a week later before the hemoglobin begins to climb the scale, and at that never reaches the point it held before the operation, even though that point may show grave anemia.

THE SANITARY RESULTS OF OUR CONQUESTS AND ANNEXATIONS.

The addition of tropical territories and population to our national dominion has certain medical and sanitary bearings that are well worthy of careful consideration. This statement does not necessarily imply that such additions involve any elements of national peril in a medical point of view, though that has been urged as a fact by those opposed to such territorial expansion, but simply that it enlarges the range of our national hygienic supervision and brings some sanitary problems more nearly home to us than was formerly the case. Instead of involving new dangers the extension of our rule ought to eradicate existing ones to a large extent and favorably modify others where their complete avoidance is impossible. Warm countries are commonly regarded as unhealthy, and they certainly have some special disadvantages in a hygienic point of view, but it is a fact that ordinary sanitary precautions are hardly anywhere so habitually disregarded as they are in every tropical region, especially by the whites there residing. Dr. MANSON and others have shown that most of the formidable disorders peculiar to the tropics are more or less avoidable, even by those who have no inherited or racial immunity, and that there is no good reason to assume that the white race can not flourish there, so far as their physical welfare is concerned.

Whatever influence the United States may have over the future of Cuba, whether as a friendly or protecting power, or as exercising actual dominion, should be for the mutual good, and this is particularly true as regards matters of public health. The sanitary reformation of Cuba will be for us an even greater blessing than its political redemption, for heretofore and up to the present it has been a continued threat of impending pestilence, solely on

account of neglect of sanitary precautions and decent hygienic regulations. With yellow fever endemic in Havana and Santiago, there will always be a chance of its introduction into our Gulf ports, and whatever arrangements are made as to the future of Cuba, it is the duty of our government to see that adequate guarantees are given that the there existing anarchy in sanitation is to be quickly and thoroughly abolished. This will be a result of the war that will be well worth a large part of its cost.

Porto Rico, as a territory of the United States will come directly under our laws and whatever dangers to health exist there can be met with our own resources. It is said to be a comparatively healthy island for a tropical one, and it may be no serious sanitary questions will be raised.

Much was said by the opponents of Hawaiian annexation about the danger from the leprosy infection, of which it is a center. Whether this danger will be in any degree increased by annexation is open to question; our commercial and other relations have always been close, and especially so of late years, since the reciprocity treaty has been in existence. Hawaii has been practically an American dependency for many years, and political union can not very materially alter the conditions. So far as it can have any effect it should be for the better, as it puts matters under our own control and gives us the power to remedy any existing defects in hygienic conditions or sanitary laws. That we can improve upon the present régime is perhaps doubtful as far as leprosy is concerned, as it does not appear that more precautions are taken anywhere against the spread of this disease, or a more thorough system of isolation carried out than is the case in Hawaii. The fact, also, that there are only about a dozen white lepers in the settlement on Molokai and these presumably all that could be found in the islands, would indicate that the extension of the disease is almost exclusively among the natives, whose habits seem especially to favor its spread. In any event the danger of leprosy infection to our people would seem to be slight, less indeed than from the Louisiana lepra focus, where a much larger number of whites appear to be infected. In other respects Hawaii is certainly a healthy region and the white race appears to flourish there; aside from the leprosy question no serious sanitary problems are involved in its annexation.

The Philippines, which may also come under our rule, present the usual hygienic conditions of warm countries with large rainfall. Some of the islands, like Mindoro and a few others of the group, are notably unhealthy, and the uncultivated portions of some of the larger ones are also subject to fevers, etc. In other respects, however, there seems to be no reason why with proper precautions Americans who may go there should not be as well cared for as anywhere else within the tropics. If they come under our flag we may find that we have to meet some new conditions, but the sanitary problems will probably not be the most serious ones.

The results of the war ought not, in a medical point of view, to be on the whole otherwise than beneficial, as it will put it in our power to remedy existing abuses, and it should not be anticipated that new ones will be created. A decent military administration of Santiago has, it is said, already stamped out yellow fever in that city, where it has existed endemically, and a like result may be anticipated under perhaps greater difficulties in Havana and elsewhere.

A STORY OF CHICKAMAUGA.

Members of the AMERICAN MEDICAL ASSOCIATION have no doubt been troubled in mind during the progress of what we may now call the late war, by the continued attacks in the press on the Medical Department of the Army, from the Surgeon-General at the War Department and his officers of every grade in the general and division hospitals down to the gallant medical men who dressed the wounded under the fire of the Spanish sharpshooters at the crossing of the Aguadores river. The sanitary conditions in the home camps have also been severely criticised, and the onus laid on the shoulders of the Medical Department. The injustice of this criticism has led Major R. STANSBURY SUTTON, Chief Surgeon U. S. Volunteers, to discuss with a free pen the conditions existing in the camps in Chickamauga Park (see p. 650). It takes a man of large experience and mature mind to deal with these subjects, for some of them are of a nature so delicate that the average man would probably pass them over in silence because unwilling to suggest the existence of a stain on the moral character of any of the gallant young men who volunteered to carry our flag to victory. Dr. SUTTON charges much of the sickness that prevailed in the Volunteer camps at Chickamauga to the dissipation of the men. It would probably be difficult to verify the alcoholic excesses by any official record, as men on pass usually sober up before returning to their commands, and the men reported as seen by the Doctor were probably all on pass. Whether his estimate of the prevalence of venereal disease will be substantiated by the official statistics remains to be seen; but we recall the fact that these diseases were so prevalent in certain army corps camped near Memphis and Nashville during the Civil War that special military methods had to be adopted for their suppression. The medical officers on duty with the ambulance corps at Chickamauga no doubt did their duty in drilling the men of the hospital companies in first aid: and if they spent their leisure otherwise than in medical reading and study, allowance must be made for the deteriorating influences of camp life. The Red Cross and other national relief associations receive due credit for their work, and the stories of cruelty and neglect that have filled the newspapers are shown to be false.

CORRESPONDENCE.

A Grave Menace to the Public Health.

NEW ORLEANS, Sept. 8, 1898.

To the Editor:—Without entering into the unseemly wrangle that the Medical Department of the Army is engaged in, I would like to call the attention of the profession through its own JOURNAL to two new diseases—new to the physicians who have spent their lives in the United States, but old to those experienced in diseases of tropical countries—I allude to tropical dysentery and tropical anemia, the former being due to the ameba, the latter to the ankylostoma duodenale. Our soldiers returning to their homes along the many railroads that ramify in every direction over our country, are liable to infect the entire country with the germs of these two insidious and apparently, in their incipiency, ordinary affections. If it be true, and I think every intelligent physician holds that view, that typhoid fever is pre-eminently a preventable disease, and consequently its alarming prevalence in all of our camps is *criminal* and due entirely to ignorance, which has been said to be worse than crime, how much more than criminal is it for our medical department to aid and abet the incompetent war department in scattering broadcast over our fair land two of the most deadly diseases of the tropics? It is claimed with the amplest authority that every case of typhoid fever originating in a camp is due to the criminal neglect or ignorance of the medical officer, some colonel or major, in charge of that camp. Now, without questioning the right of army surgeons, who, by the way, resent being addressed as physicians, to allow their charges to become infected with death-dealing germs, I do protest as a civilian, a plain doctor, to their scattering these germs all over the country among civilians, who have no captains, majors or colonels to treat them. I claim that one case of typhoid fever, amebic dysentery or tropical anemia traveling from Montauk Point to California, is liable to infect any or every stream between the Atlantic and Pacific that he crosses. It is high time our distinguished Surgeon-General warned the bargain-counter politicians in the war department that such things must cease, and cease at once. None know better the grave danger that confronts us than Dr. Sternberg. I beg pardon *General*, for calling you Doctor, but your reputation as a scientific, accurate physician is so well known that I had forgotten the measly little star on your collar. Now the regular army, medical and lay, let no opportunity slip of finding fault with the volunteers and the civil surgeons, so let them bear the blame as they claim the glory in this matter; for let it be distinctly understood that none but surgeons in the regular army have a word to say about this matter. The Secretary of War, if he consults any medical men, consults those in authority. I hold that the time has come when the medical department of the army should be governed by common sense founded on mere known facts, facts known to the medical and lay world alike today.

Today there are said to be cases of yellow fever in this section of the country. Do we gather up all the cases and divide them up in all adjoining States? No. The Marine-Hospital Service establishes camps of detention for those who have been exposed to the infection and keep them there ten days before allowing them to invade healthy territory. The sick are strictly isolated and kept so until recovery or death. Eight hundred marines were camped for many weeks at Guantanamo and their health remained excellent, and why? Because the surgeons of the Marine-Hospital Service not only understand preventive medicine, but they *practice* it. Every man in that Service is qualified for the work he is assigned to. The War Department seems to defy all known laws of sanitary science in pursuing a course diametrically opposite to that adopted by the Marine-Hospital Service, as well as all State and municipal health officials. All soldiers suffering from dysentery, anemia (tropical) or typhoid fever, should be confined in suitable hospitals and kept there as long as the microscope shows them capable of being a source of infection to others. All the dejecta, urine as well as feces, should be subjected to sufficient heat to destroy germ life.

All red tape should be brushed away, and instead of moving camp every time the camp becomes infected through the grossest neglect of all hygienic and sanitary laws, the medical officers responsible for such a condition should be removed on the ground of incompetency, and in their stead should be appointed men of known ability, men who are major generals in the warfare against filth and filth diseases. In every large city on this continent can be found physicians who have spent years of their life in this branch of medicine. The Government should employ such men at salaries commensurate with their ability. Good physicians are cheap at any price, and our Government should promptly employ the best. What would happen to the health officials of Chicago or Washington if 10 per cent. of their population should be stricken with typhoid fever within sixty days? The residents of those cities could not conveniently change the location of the cities every sixty days, but they would most assuredly change health officials, who, in turn, would change the sanitary conditions.

Before closing, I wish to state that this article was not written to criticize the army surgeon, for I know full well his worth, his faithfulness and his ability. The gifted head of the Service needs no one to defend him. His many contributions to medical literature entitle him to say with Horace: "*Exegi monumentum perenniusære.*" What I have written is purely in the interest of the public health of the nation. I refuse in advance to enter into any controversy with bureau doctors, whose time is paid for by the government and hence worth nothing to them.

"Facts are far superior to reasoning."—*Hippocrates.*

Very respectfully, T. S. DABNEY, M.D.

The Treatment of Typhoid Fever.

CHICAGO, Sept. 10, 1898.

To the Editor:—While much, of late, has been written on the treatment of typhoid fever, I feel that a brief statement of my experience may be of some value to others, especially as I seem to have met with greater success than anyone else whose reports I have read. I have thus far hesitated to relate my experience, because of the fact that when I changed my location several years ago, to adopt a more exclusive practice, I destroyed some of my records. However, I can recall at least twenty-eight cases in my last four years of general practice, and I think there were more in that period. But one can easier recall deaths than cases. Two deaths occurred among my typhoid fever cases during the four years in question, but one of these two cases was moribund when I first saw it. It was the case of a young man brought home from the pineries, suffering with the fever. When I first saw him he was delirious, and he died two or three days later. The other case was a middle-aged man who was allowed to get out of bed frequently, but contrary to my instructions, and suddenly expired, although his condition had not been particularly alarming. No postmortem was held.

One of my cases of typhoid was a robust farmer, who recovered, but prematurely left home for a week to attend to some business. He returned sick, having a premonition of pending death, with what I took to be diphtheria. He died in a few days. Postmortem revealed the intestines normal, but kidneys greatly congested. Thus it will appear that in reality I only had one death among the cases which I treated from start to finish.

My treatment had special reference to the following dangers: loss of vitality; germ breeding in the intestine; perforation and hemorrhage.

The first evil was met by isolation in as quiet a room as

accommodations afforded. I strictly prohibited visiting by friends on penalty of my quitting the case. Relatives were allowed to visit for a few moments during certain hours of the day. I often had much fighting to do on this point, but I pushed my demand with severity and invariably won respect in the end. A glassful of milk was given punctually every four hours, supped from a spoon. When half the glassful was taken a few minutes' rest was given before the remainder was supped. Sometimes a dose of lactopeptin or liq. pancreatin followed the milk. Grapes, if procurable, were allowed freely, as was also cold water to drink in small quantities at a time. Every four or six hours, and sometimes oftener, the entire body was gently wiped with a soft piece of muslin dipped in luke-warm water containing a teaspoonful of bicarbonate of soda to the pint. The wiping and drying was done in patches, and the proceeding was not only gently but patiently accomplished. This process of cleansing and cooling had the effect of mild massage and was invariably refreshing if done *gently* and *slowly*. Frontal headache was usually relieved by dipping a piece of muslin in a solution of cyanid of potash in laurel water (10 grains to the ounce) and laying it on the forehead for ten or thirty minutes.

The second point was supposed to be met by increasing the flow of bile into the intestine with one to three grains of calomel twice a day. Codein was given if griping was experienced. The calomel was kept up until the crisis was over.

The third danger seemed to be met by giving three or four drops of rectified turpentine every four hours, to diminish the gas in the inflated bowel and thus reduce the liability to perforation from distention of the bowel and the pressure of the gas on its ulcerated surfaces. Kidney complication was watched for, but the turpentine was seldom suspended if the bowel was markedly tympanitic.

The fourth point—hemorrhage—seemed to be forestalled by giving a dram, more or less, of the fluid extract of hamamelis every four hours. About twelve years ago I read an article in the *British Medical Journal*, by Shoemaker of Philadelphia, on "Hamamelis as a Vascular Constringent, etc." I then began to use it in a variety of varicose and hemorrhagic cases and was so favorably impressed with it that I concluded that its constringent, astringent and tonic properties would be serviceable in typhoid fever, as a preventive of hemorrhage, if nothing more. I therefore adopted the following prescription, which was only modified to meet the factors of the personal equation:

℞ Spts. Terebinth. Rect. . . . . ℥i
Spts. Juniper. . . . . ℥ss
Fld. ex. hamamelis (P. D. & Co.) . . . . . ℥ii
P. acacia . . . . . ℥iss
Aq. qs. ad . . . . . ℥vi
Sig.—Dessertspoonful every four hours while awake.

All the cases ran a moderate course and seemed to be abbreviated, as compared with my experience for ten years prior. The diarrhea seldom called for interference. Medicine and milk alternated every two hours, but were, as a rule, not allowed to interrupt sleep for two hours more if sleep continued that long. The cases were mostly sporadic and mostly in the country. Several families had three or four cases at the same time. A few were fat, flabby women of very low physiologic tone.

J. SANDERSON CHRISTISON, M.D.

The "New Interpretation of Operative Principles"—A Pertinent Question.

KANSAS CITY, MO., August, 1898.

To the Editor:—What should be the attitude of the "science mind" in regard to discoveries and theories, revolutionary in their character and tendencies in medical science; in other words, the duty and obligation of the scientific physician in respect to "new interpretations of long-accepted basic principles in medical science now being promulgated? Unfortunately our wording of the subject is wordy; we trust our discussion of it will not be found mere words. It is said, history repeats itself. Up to the beginning of the fifteenth century the Ptolemaic system was the accepted astronomic science. All discoveries of new planets or fuller knowledge of known ones was adjusted to the recognized Ptolemaic plan of the earth as the central body. Many "hitches" in the workings of the scheme and anomalies arose here and there and again and again, but they were silently ignored or explained on some hypothesis, or openly confessed as something needing illumination and elucidation. This was the condition of astronomic science for many centuries. Meanwhile patient investigators had been at work studying the difficulties that presented and the theories of explanation given. Light dawned here and there; more rational, yet still crude, ideas were conceived, until at length Copernicus, gathering the converging rays of light, discovered the error of the ages and installed the sun as the central orb, and promulgated what has since been accepted and termed the Copernican astronomic plan. With the sun as the center, all the planets fell into their natural places, and harmony and beauty reigned. The disagreements in the various theories and hypotheses soon disappeared; untenable ones were discarded, and though there have been added by discovery new worlds to the system, and more exact computations of distance and of plane of orbit, etc., yet no absurd theories have been projected, no fanciful hypotheses have been conjectured, agreement and harmony have prevailed from that date, because, at length, a complete science of basic principles had been constructed.

Notwithstanding all the acknowledged crudities and inadjustable inharmonies of the Ptolemaic theory, "It required one hundred years to develop a comprehension that any scientific advantage would accrue from a review of the alleged situation" (Dunham). So of course the new theory was ignored or ridiculed and combated, and only slowly, tardily and laboriously commanded, and finally obtained, recognition.

The question underlying the inquiry with which this paper began, is, Will the scientific medical man ignore and neglect, or will he boldly face and investigate "A New Interpretation of Operative Principles," which are to the last degree revolutionary and iconoclastic? It will not take a hundred years to develop a comprehension of the scientific advantage to be derived from a review of the prevailing theory of medical science. That review has long been in progress. A medical unrest has long been apparent. Dissatisfaction with the old and long-established views and principles has been stirring the minds of many for years. Medical literature, especially as seen in medical journals, presents an aspect of confusion and fanciful speculation, the most absurd and groundless theories being entertained.

The scientific mind asks, Why all this? and foundation principles are being examined. The results of this will soon be apparent, in fact, are already appearing. As voicing what we here surmise or affirm—impatience with the unscientific, dissatisfaction with the crude and imperfect, ambition for and attempt to reach the ideal—read the magificent address of Dr. Musser before the AMERICAN MEDICAL ASSOCIATION at Denver, on "The Essential in the Art of Medicine." Polypharmacy and a blind following of precedent, with any practice of the "art of medicine" not founded upon and suggested and also justified by the "science of medicine," must certainly have received its death-thrust from his well-aimed dart.

And now comes that to which we call special attention, and which we confess aroused our question and suggested this paper—Dr. Dunham's Lecture in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION of July 2, 1898, "A New Interpretation of Operative Principles." This is a part only of the title, but abundant for our purpose. The Operative Principles, "A New Interpretation" of which is all Dr. Dunham in his mod

esty claims, are as old as medicine itself, and are to be found in medical literature all down the ages to the present. Yet the theory of medical teaching up to the present day is one of confusion as to the nature and limit of these operative principles. A new, that is, a correct, interpretation has been sadly needed, and to the want of which may be charged the fanciful, erroneous and absurd theories and isms and schools of the past and alas of the present.

The status of medical science as taught and accepted today justifies the following arraignment of its position: 1. It is unsettled as to any consensus of view of the nature of vital force. 2. It assumes that positive conclusions in regard to this essential point are impossible in the present condition of medical knowledge (Mandsley). 3. There is confusion as to recognized operative principles, because these are supposed to be vital and otherwise. It is accepted that operative principle is inherent to and active within the vital doman; it is also assumed and understood that operative principles, from without become active within the human organism. "Active medical principles; active causes of disease, may be introduced and take part in operating the human organism" (Dunham). Now here we run into a labyrinth of confusion. For, back of the study of the nature of the forces which present disease phenomena, is the consideration of the nature of the forces which operate the machinery of life (Dunham). This is the question of vital force, of which, confessedly, there is at present no solution. The most vital question in medical science of the hour is, as to the precise nature and limitations of the forces operative in the living organism. Despite the fact of the acceptance—and assumption of their correctness for ages—of the medical principles stated, we must go over the ground again as to the nature of vital force. Do all operative principles inhere in the vital domain or are there supplemental forces which can be introduced from without? Now here lies the serious error of operative plan, as set forth by Dr. Dunham: "The teaching of medico-biologic science as being based on functions and operative principles derived from both within and without," while he maintains that true "medico-biologic science is based entirely on the functions and operative principles, which originate and control all the activities of the human organism, physiologic, pathologic and therapeutic, and those arise from, inhere in and are confined to the human organism." There is no operative principle outside the vital domain which may be imparted or conveyed to it. Drugs contain no operative principle by which disease can be removed and normal conditions regained. They do not act. In illustration take the law of physics: "A body at rest tends to remain at rest." It remains at rest until some force outside itself moves it, but it has no "tendency" anyhow or anywhere; it is absolutely inert and forceless. Drugs are inert and inoperative so far as any operative principle or force in themselves is concerned. In the realm of nature the higher dominates the lower. In the natural kingdoms, animal, vegetable, mineral, the higher is closed to the lower. The animal reaches down to the vegetable and takes it up into itself. The reverse is never the fact (Drummond). A transition of inorganic into organic, even by chemico-electric operation, is not tenable. The belladona test of death illustrates the argument. A drop or two in the eye will dilate the pupil if vitality remains, no response is obtained if life be extinct. Even if cerebral trauma vitiate a part of our test, eliminate that from the case and the point we make is established; the operative principle is alone in the vital force energies. *Vis medicatrix naturæ* will express the true doctrine of therapeutics. A handful of seeds were found in an Egyptian mummy hand; transferred into suitable soil they produced a beautiful plant. Vital force in the seed required conditions not found in the dead hand, but supplied by contact relation with the soil. So the drug in the living eye is inoperative in itself, yet its presence and contact with the living tissues supplied the condition on which sensation arises; sensation being a life function, dilation ensues, and since sensation is a life function only and not a mind function, dilation is involuntary (Dunham). There is truly a place for drugs. Therapeutists may as truly use medicine as vegetables use mineral, and in the same general way; the operative forces initiating from the higher. Dr. Musser is mainly right when he says: "I thoroughly believe in drugs, I am sure I have seen an effect produced." The difference is merely in the standpoint of the operative forces involved, but a vital difference, for all the "vicious therapeutics" (Dunham) of modern practice arise from this error.

This "New Interpretation of Operative Principles," a part only of which is touched upon, is the outcome of that unrest and dissatisfaction so long felt. Glimpses of this true science were dimly and hazily, yet nevertheless really, seen by one and another in the centuries past. Probably Sydenham; certainly Stahl, whose "Mysticism" contained the idea of the "anima" as the cause of both disease and cure, had more than a glimpse. His teaching (supposed to be a hybrid, having as parentage the physiology of Descartes and the psychology of Van Helmont) that the "anima" or "force" forms the body, directs in all its functions and, mayhap, by negligence or want of wisely directed effort originates disease, which it at once attempts to cure by the activities and functions of its various parts, when modernized a little further, will find a place in the science now building on "The New Interpretation of Operative Principles." Blumenbach was not far out in his reckoning when he esteemed Stahl as one of the most profoundly wise physicians the world had ever seen. The men who half a century ago talked of "vitality," which when once "expended can never be regained," who proposed by therapeutic effort to "correct nature or help nature," and oftener it may be "let nature alone" were wiser than their generation. Yet it was reserved for today for the clearer and fuller discovery of these central principles. "Vitality is a distinct force and every pathologic change is consequent upon vital action," was a profound thought, prophetic of consequences in the near future, which Dr. Lionel S. Beal of London launched forth at an opportune moment two years ago. Von Virchow, a year later, seeking in the mazes for "the point at which medicine begins to form a part of biology" and devoting the last days of his life to "establish and spread the idea that pathology should be considered a branch of biology"; the American editor who, later yet affirmed, "there is no drug yet discovered, unless it be alcohol, which adds to the forces of the body," were pioneers in the field where Dr. Dunham realized his "find." And now, in place of the unsolved problem of vital force; in place of confusion as to the nature and limitations of operative principles; with all the theories and hypotheses ingeniously contrived to make a whole of three halves, we shall have the rational and completed twentieth century science of medicine.

Cuvier's teaching that "the first question in science is always a question of method," when accepted revolutionized the previous systems of natural history, at least the classifications, and installed the method of investigation and experiment in place of mere "long distance" observation. So this change in the "interpretation of operative principles" will work as great a revolution in medical teaching and science. The same line of thought which we have pursued in therapeutics will be found equally applicable to pathology, and will overthrow much of modern theory and speculation as to the causes of disease. Not to pursue the theme further, we maintain that it is absolutely incontrovertible that the "new interpretation of operative principles" is correct. Whether the science built up to harmonize with the new operative plan be complete or not remains to be seen. And yet this does not fairly state the point, for the "new interpretation of operative principles" grows out of the science itself and is part and parcel of it.

JOSEPH CLEMENTS, M.D.

1113 West Seventeenth Street.

The Troops in Santiago.

NEAR SANTIAGO, July 13, 1898.

[Delayed in Transmission.]

To the Editor:—Since my last on the 2d inst., yellow fever with its usual attendant scare has made its appearance in the camp of our army, nor is it anything but as a natural sequence of the violation of both the laws of health and ordinary precaution.

After notification to Spanish authorities that Santiago would be bombarded after twenty-four hours the foreign consuls in the city asked permission to let non-combatants and foreigners pass out. General Shafter granted the request, which was perfectly proper and most humane, but the great and inexcusable mistake was to allow them to pass through and disseminate among our camps and to have them hauled in our commissary wagons to Siboney, some nine miles distant, where is located our general hospital and the point of debarkation of troops and the embarking of our sick and wounded. There are two roads leading to the northwest and north of Santiago where refugees could have gone and our troops would have been safe from contagion.

Now to slightly recapitulate, for in my last I mentioned the want and great need of proper army sanitation. On landing, both at Baiquiri and Siboney, our soldiers were allowed to enter and dwell in abandoned shanties, for that is true of the so-called houses. At Siboney two of the houses were converted into hospitals for the reception of the wounded from the battle of La Guacima. In one room were four cases of measles within six feet of the wounded. No doors closed any of the openings in the house. Soldiers were pushed rapidly along, advancing without sufficient food, as the commissary department was landing supplies very slowly indeed. There was and is bitter complaint about the commissary department. The sun was quite warm and the troops marching rapidly on scant food—frequently a few hard tacks and water their only sustenance for twenty-four hours or more—were unable to carry their rolls, hence they threw them aside; the result is that many soldiers are sleeping in the open air and on the damp ground. Hospital tents had been established by Dr. Cooke two miles and a half west of San Juan Hill, where General Hawkins made his brave charge, but the conflict was so fierce that the tents were soon inadequate for the wounded, and as tents were still on board the ships, poor wounded soldiers were compelled to lie on the wet ground for days, when they were removed to Siboney to the general hospital. Ambulance service was very good, but the supply of ambulances was too limited; the result was that one-half the wounded were hauled from the temporary field hospital to the division hospital in commissary wagons, which caused great suffering. As I dressed the wounded for two successive nights I speak from observation.

The pits for feces were not dug for several days after the canvas was pitched, hence an unpleasant odor from every thicket. The wounded were compelled to go from twelve to twenty-four and in some cases thirty hours without sufficient food. Their appeals for soup or something to eat when I would go among them can never be forgotten. The attending surgeons did all in their power to relieve the distress, but they had not the supplies sufficient.

The fever cases, not yellow fever, but fever caused by hot sun, bad water, sleeping unprotected, and last, but not least, from scant food, are now in little shelter tents only a hundred feet from my tent. The number of this class of cases is increasing rapidly. At this writing there are over 200 cases. Just across a little pathway there are eight more shelter tents and in these there are six cases of yellow fever and two cases of suspected fever with no precautions whatever to prevent contagion, for along this path soldiers all pass every few moments. Just to the east and not 200 feet away, is where the pack mules and commissary wagons camp nightly, all on a level and open ground where the water is now standing from one inch to four inches deep; this water slowly drains along between and into the tents of the sick. There are plenty of hills and mountain sides near where comfortable tents could be located. No pest house has yet been established at this camp. At Siboney one has been established for nearly a week. Just south of the general hospital at Siboney and across the railroad track is a coral reef too high for the sea waves to wash over it. This reef is the nocturnal privy, and is one extended mass of filth, and effort is made to prevent it, although two pits are near. Despite all the bad hygienic conditions the wounded are improving more rapidly than under more favorable conditions at home. Of the surgery and fevers will write in my next; will state however that perhaps up to date 200 cases of yellow fever is a large estimate. With rare exceptions the cases are very mild.

The scare is worse than the disease, and want of hygiene worse than all. ORLANDO DUCKER, M.D.

Dr. Scheppegrell's Book.

NEW ORLEANS, Sept. 6, 1898.

To the Editor:—On my return to the city, a few days ago, I noted the reference to my recently published work on "Electricity in the Diagnosis and Treatment of Diseases of the Nose, Throat and Ear," among the Book Notices in your issue of August 20.

An author naturally expects various kinds of criticisms, but the writer in medical literature has reason to believe that his work will receive fair attention at the hands of the more important medical journals, and that the criticisms will be made by some one competent to judge of the merits or defects of his work.

In the case of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, there is, according to my opinion, more than the usual relation between subscriber and editor. This journal is the official organ, in fact the mouth-piece, of the AMERICAN MEDICAL ASSOCIATION. In other medical publications, if the reader objects to the methods of the periodical, he simply cancels his subscription; with the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, however, the journal is part of the organization, and cancellation of the subscription is practically a resignation of membership. The editor, in fact, holds his office, not through the good-will of the publisher, but by the vote of the members or their representatives. When, therefore, an article is submitted for publication, or a work for criticism, it is entitled, not only to the courtesy of the editor to a subscriber, but also of an officer of an association to one of its members.

In the case of my work, which was sent you, I will admit that it refers to a special part of medicine, namely, of the nose, throat and ear, to which a physician devoting his time to general medicine would scarcely be expected to make a fair criticism. Not only is this the case, but it refers especially to *electricity* in this department, of which even a specialist in nose and throat diseases might hesitate to venture an opinion of its merits. Under the circumstances, therefore, had the JOURNAL simply given the name and title of the work, this would have answered the purpose, and it would not at least have given an erroneous impression. On the other hand, there are many men in Chicago who would have been able to criticise this work with credit to themselves and with justice to the author.

In your criticism, the only part that refers to the work is the first paragraph: "The illustrations in this book are fair, and the printing is well done. The book is printed on good paper." This is as much to the point as if an artist had submitted a painting and the critic had reported that the canvas was fair, the paint well prepared, and the frame good.

The other paragraph has no reference to the work whatever. It is simply a succession of generalities, which might refer to

any work on electro-therapeutics, and which belongs to a method now out of date. The reader expects not generalities, but a weighing of the good and bad points of the work which a journal undertakes to criticise.

Not only is the criticism vague, but it is limited to the subject of electro-therapeutics, which forms but a minor part of the work. Had the critic, instead of limiting his attention to the "illustrations, printing and paper," read the work, or at least looked over the table of contents, he would have convinced himself that electro-therapeutics forms but a small part of the work; a large proportion refers to the subject of electro-physics, which has been reduced to as scientific a basis as any other department of physics. The subject of electric illumination and transillumination is no longer one of controversy, but is now almost universally advocated. Electrolysis, cataphoresis and massage, by means of electric appliances, belong more to electro-surgery than to electro-therapeutics, and the subject of the X-rays has passed beyond its experimental stage, and is now admitted as a useful procedure in hospitals and medical colleges.

The book has only recently been published, and I have thus far seen but three criticisms in addition to a number of simple notices. Of the three criticisms referred to, one is in your journal, August 20; the second is in the *Journal of Eye, Ear and Throat Diseases*, Baltimore, July, 1898, and the third in the *Memphis Medical Monthly*, September, 1898. I herewith enclose a copy of the second and third ciriticisms, which bear on their face the evidence of a careful reading of the matter and a weighing of its merits. They form a strong contrast with the vapid generalities in the official organ of the AMERICAN MEDICAL ASSOCIATION. Yours very truly,

(Dictated.) W. SCHEPPEGRELL, M.D.

[Enclosures: Extract from *Journal of Eye, Ear and Throat Diseases*, July, 1898. Extract from *Memphis Medical Monthly*, September, 1898.]

ANSWER.—This journal has not space to do more than give brief "notices." It rarely prints "reviews." The aim is to inform the reader what the contents are. In this case the title was sufficiently explicit. The manner in which the publisher performs his part of the book-making is not a matter of indifference, but a proper subject of praise or censure. Nothing was said to the detriment of Dr. Scheppegrell's excellent work in our notice, which is now given the additional notice its author desires.

Hospital at Fort Myer.

U. S. GENERAL HOSPITAL, FORT MYER, VA.
Aug. 30, 1898.

To the Editor:—We have here a magnificent hospital under the command of Major and Surgeon W. B. Davis, U. S. A., whose earnest work is making this one of the finest hospitals in the country.

We have about four hundred patients, and one ward containing 200 beds as yet not entirely filled. This ward I believe to be the largest in the world.

Most of our patients are typhoid, and every material is at the hands of the surgeon in charge with which to do his work.

The charges and criticism relative to improper food and attendance is, in the case of this hospital, a falsehood, and I believe it to be so in the others, for as rapidly as possible every thing is being accomplished for our sick soldiers.

Respectfully, D. H. LAMB,
Acting Assistant Surgeon, U. S. A., formerly of Owosso, Mich.

Is there Danger in Employment of Female Assistants by Dental Surgeons?

LA PORTE, IND., Sept. 12, 1898.

To the Editor:—Should dental surgeons employ female assistants? It would seem not if the following cases can proven to be more than a coincidence. Some years ago dentist in our city had a young woman in his employ to as in his surgical operations. After remaining in the office s eral years she was married, and in due time an infant appea upon the scene with a hare lip and cleft palate. The yo woman who next assumed her duties in the office remai eight years, when she became a wife, and recently gave bi to a daughter with the same horrid deformity. I would l to hear from the profession if similar cases are on record.

E. L. ANNIS, M.D.

PUBLIC HEALTH.

Governor Tanner has appointed Dr. A. C. Corr, of Carlinvi to the vacancy in the Illinois Board of Health. He was l year President of the Illinois State Medical Society, and i understood that he will be the next President of the Board.

How to Use Millions Usefully Against Tuberculosis.—The edi of the *London Practitioner* reminds his readers that so years ago a millionaire, burdened beyond most of his kind w a sense of the duties of his position and fortune, asked thro a newspaper for suggestions as to the employment of wealth in the way likely to be most beneficial to the publ For some reason or other nothing came of it. If such a qu tion were asked again, I should unhesitatingly answer th there could be no better object than the foundation of proper equipped sanatoria in this country for poor sufferers fr phthisis. That the public, if appealed to in the right wa would help liberally is not to be doubted. The manner i which they support consumption hospitals shows that the help might be counted upon in an active crusade against t disease. But the question is not one of merely philanthrop interest; it is of national importance, as it closely concerns th maintenance of the vigor of the race. On this ground the o operation of the State might well be asked. In this country is notoriously difficult to get even enlightened statesmen t attend to anything out of which party capital can not be mad But even here the day is surely, if somewhat slowly, comin when ordinary legislators will be brought to recognize that t public health is the first and greatest of political question Let us, in short, have a national crusade against a nation disease.

The Plague in India.—It is discouraging to learn, as we do b telegraph, that after all that has been done for Bombay in th way both of curative and of preventive measures, the plag has broken out afresh in that unhappy city. As yet, it is tru there is nothing alarming in the reports that have reached thi country; for these speak of an increase of mortality from thi source of only about 20 per cent., as compared with the figure for the corresponding weeks of last year. But the distressing thing is that there should have been an increase at all, whe we might so reasonably have looked for a decrease, if not ere for an entire stamping out of the germs of this disease. Fo the most recent advances in the science of bacteriology hav been brought to bear by some of the most skilled Europea experts, on the vital problem presented by the condition o Bombay. All the tried and prophylactic measures have bee put into force there and the whole power of the governmen has been placed at the disposal of the health officers, who hav been doing such valiant battle with their insidious foe; but th results show that when it has once found a congenial environ ment the expelling of it is very far from being an easy task. Some parts of the city, it is said, have been so completely changed by the clearing away of plague-infected dwellings that it would be difficult for an old residenter, in paying the place a visi after an absence of a year or two, to recognize localities with which he was, until recently, most familiarly acquainted. It

is to be hoped that the monsoon now prevailing will effect a cleansing both of the air and of the soil; and in any case the good fight must continue to go on. It is all the more distressing to learn of this recrudescence of the disease when the reports tell that it has spread in rather a serious form to Southern India, and that in Madras the situation is complicated by an outbreak of cholera.—*Sanitary Record*, Sept. 9, 1898.

The Plague in Central Africa.—Hitherto three of the homes of Asiatic plague have been recognized, two of them in Central Asia, and the third in Southern Arabia. Now, according to a correspondent of the *Medical News*, the range has been extended, for while in German East Africa, Koch found that a fourth focus of plague, a locality in which, according to the natives and missionaries, the disease has been endemic for as long as there is any tradition exists on the northern shores of Lake Victoria Nyanza in Uganda. His attention was called to the fact by the recurrence in Kisiba, the most northwesterly district of German East Africa of certain suspicious cases. At his request an army medical man investigated the disease directly in the infected district, and sent the specimens of a number of cases to Koch on the coast, three month's journey away. The specimens were in excellent condition when they arrived, and Koch came to the absolute conclusion that genuine plague was endemic at least in this part of Central Africa. From here he thinks that certain epidemics have gone down the Valley of the Nile and so invaded Europe. The otherwise inexplicable epidemic of the disease at Tripoli in the seventies probably had its origin in some such way as this. This plague-spot is, in the progress of civilization, gradually becoming less segregated as it was. Caravans often come from this district, and the English in British East Africa are engaged in building a railroad from the coast into this Victoria Nyanza district of Uganda, which will be completed in two years, and will still further add to the danger of the importation of the disease into Europe.

Disinfection of Sputum.—It is a serious wrong to allow the sputum of any consumptive to go undisinfected or undestroyed. Destruction by fire should be the rule as far as practicable. Comparatively few chemic disinfectants can be trusted to destroy the bacillus of tuberculosis in fresh sputum. An abundance of experimental work has established this fact. Solutions of corrosive sublimate are wholly unsuitable. Milk of lime, a valuable disinfectant for some purposes, is too slow and uncertain for the disinfection of tuberculous sputum. Chlorid of lime is too irritating to be kept in the vicinity of the patient. Ascoli states that solutions of formaldehyde are efficient disinfectants for fresh tuberculous sputum, but its action, somewhat like that of corrosive sublimate in coagulating albuminous matter, dictates the advisability of awaiting a wider research in this direction. Among the agents which may be trusted in this particular line of disinfection, the experiments of Shill and Fischer, Jaeger and others show that the phenol preparations, carbolic acid, lysol and solutol, have a special activity when applied to the destruction of the tubercle bacillus. Of these, the work of Buttersack for the Imperial Board of Health of Germany indicates that lysol is distinctly superior to carbolic acid in the disinfection of tuberculous sputum, and the statement of the same investigator is supported by that of most of those who have tested it, that solutol is a still more active disinfectant than lysol. For the disinfection of tuberculous sputum in spittoons, a 5 per cent. solution of carbolic acid or a 4 per cent. solution of lysol or solutol may be used. The disinfecting solution should act twenty-four hours before the sputum is thrown out. When no other disinfectant is available, hot lye, made from wood ashes, may be used, or a tablespoonful or so of washing soda may be thrown in, and the vessel may then be refilled with boiling water, covered, and set aside to cool. The same rules should be applied to the disinfection of sputum in pneumonia, influenza; and their application in chronic bronchitis is also desirable, for the reason that a tubercuiar cause remains long unrecognized in some of these cases.—*The Sanitary Inspector.*

The Scarification in Vaccination.—The New York City Board of Health, having had occasion to revise its circular on information as to vaccin and vaccination, has dealt with the subject of the latter operation in the following terms: "The part of the body to be preferred for the vaccination is at the insertion of the deltoid of either arm. When the leg is vaccinated (possibly on account of the greater difficulty of keeping it quiet and clean) inflammatory complications are more frequently present and are apt to be more severe. The skin at the place chosen should be made clean. It is doubtful if attempts at more than simple cleanliness are of value; reports of series of cases in which one arm has been vaccinated with only ordinary attention to cleanliness and the other arm vaccinated after most rigid antiseptic measures had been carried out, indicate that no greater freedom from inflammatory complications resulted in the antiseptic arm than in the other. The scarification should be made with a sterile instrument. The Department of Health recommends the use of an ordinary cambric needle, because a new one may be used for each case and there is thus no possibility of the transference of an infection from one person to another. When, however, the necessary precautions can be taken to render the instrument aseptic, any other sharp instrument serves as well. It is of great importance that the scarified area should be not more than one-eighth of an inch square, because the larger the area the greater the tendency to subsequent infection and to inflammatory complications. Moreover, with the more concentrated virus at present issued by the Department of Health, a small scarification is ample for invariable success. It should be noted that a vaccin vesicle enlarges peripherally, and the resulting crust always covers a considerably greater area than that originally scarified. The virus should be rubbed in thoroughly and allowed to dry for at least ten minutes. It is a convenience to blow the virus from the capillary tube in which it is contained on to the accompanying piece of wood and then rub the wood on the scarified area, instead of blowing the virus directly upon that area.

Increasing Demands for the Sanitation of Creameries.—This subject is a theme of a paper in *Public Health*, July, by Dr. Lippincott of Hopkinsville, Pa., who is himself a veterinarian and a dairyman. "As is customary, at such establishments, the wagoner brought the milk can filled with "slop" that is supposed to be good enough for hog feed. It is generally understood on the outside that the farmer who sends his milk to the creamery gets skim milk in return, but when it comes to reality, they are only entitled to the slop out of the out-wells where all refuse of the creamery is conducted. This is exposed to all kinds of weather, but nothing affects these wells as does the sun and hot weather. They are never cleaned out, and having run into them each day skim milk, water, dirt and washings from the buildings and utensils, this mixture came home in our milk cans. Imagine my surprise when the man emptied the return cans of slop, which had the foulest odor, not unlike the very worst kind of a water closet or human excreta. After a few returns of this kind my man refused to wash the cans, and no one could blame him. If I could present a sample to this meeting your noses would suggest that one dose would suffice. Yet the farmer continues to cart this home, and his swine are forced to drink it or starve. This is not only true of our creamery, but all over the State. In our experience, after washing and rewashing, the cans retained the filthy odor two or three days, yet the farmers fill the same cans in the evening with fresh milk for the next trip; this is

repeated daily; from this milk comes the butter to your table and mine. I am informed that the State Board of Health is unable to remedy this evil for lack of legislation. New Jersey is fully prepared to meet and correct any such matters. Imagine my surprise upon receiving from Dr. Lee, the secretary of the State Board of Health, a reply to my suggestion that an inspector be sent, that this great Commonwealth has no such inspector. If Dr. Pitfield is looking for a fertile soil for bacteria, a visit to one of these blind wells on a hot day would show him all he needs. I engaged the attention of the proprietor, pointing out the facts and the easy means of correction, but I am met by the remark it is time enough when such becomes a aw. They can easily be kept clean at little expense by having an outlet making such a flush well in a place of a stagnant pool."

Preventive Measures Against Tuberculosis at New York City.—Dr. Herman M. Briggs gives in the *London Practitioner*, June, the latest account of the results in New York consequent upon health board measures for the restriction of pulmonary phthisis. He divides the efforts of the Department of Health under the three heads of notification, education and other preventive measures. While still far from complete, especially among that class under the care of private physicians, the notification of cases of tuberculosis shows a marked and continuous increase. Thus, during 1894, the year in which registration was begun, 278 cases were reported by physicians and 3985 by institutions, while in 1897 1919 cases were reported by physicians and 7653 cases by institutions—9572 cases altogether. Another evidence of increasing confidence on the part of the profession in the attitude of the Department of Health with regard to the control of this disease is afforded by the increase in the number of specimens of sputum sent in for examination, each specmen which contains tubercle bacilli representing, as it does, a report of a case. These specimens have increased from 511 in 1894 to 2703 in 1897, while during the four years since the work was begun, a total of 6897 specimens has been examined. The educational influence and value of the measures adopted by the Department have been marked. The inspectors report a most gratifying increase of intelligence among the better class of the tenement-house population with regard to the true nature of the disease and the usual method of its transmission to others. They find in many instances on their first visits to consumptives that efficient means have been taken to properly care for the sputum, through the use of rags (which are afterward burned) in place of handkerchiefs, or of cups containing water or some disinfectant, etc. Another evidence of the increase of popular intelligence is found in the requests from citizens, now received by the Department almost daily, for the disinfection of infected clothing, etc., and for the inspection of premises occupied by consumptives. Where the premises occupied by consumptives are vacated by death or removal and are, in the judgment of the inspectors, probably infected, recommendations for their renovation are made to the Board of Health, and on the basis of the recommendations, orders are issued by the Department on the owners of the premises, requiring such renovation. It will be observed that *renovation* —not disinfection—is required. This involves the application of simple, and in tenement houses, inexpensive measures, i. e., scrubbing painted woodwork and floors with a hot soda solution and repainting, repapering or rekalsomining the walls. These measures are certainly efficient in ridding an apartment of tubercular infection (while efficient disinfection in such apartments is difficult or impossible), and at the same time they are easily understood, leave the premises in an improved condition, and as a consequence are cheerfully acquiesced in by the tenants, and are promptly carried out in almost every instance by the owners of the buildings. Where the consent of the owners can be obtained (and there is but little difficulty in this), infected bedding, clothing, carpets, etc., are removed by the Department, on the recommendation of the inspectors, to the disinfecting station and disinfected by steam or destroyed at the option of the owner, without expense to him.

Bubonic Plague Spreading.—Advices from Simia, dated Aug 29, announce that there were 2300 deaths last week in Bombay Presidency. The epidemic is spreading and there been a fresh outbreak in the Province of Hyderabad.

Consumption Among the Negroes.—Dr. James Evans of Pi ence, S. C., writes that the susceptibility of the colored r to phthisis, and its extreme fatality among them, has made deep impression on every observant physician in the Sou and the subject is invested with peculiar interest, as the exc sive mortality has overtaken the race since emancipation, sho ing that the disease is more prevalent now than it was dur the period of slavery. In investigating this phase of the su ject several years ago, I made inquiries among the rice plant dwelling on the coast, who were the owners of a much larg number of slaves than elsewhere in South Carolina, as to t frequency and mortality of consumption among their slave The result of this inquiry was that phthisis in any of its form was an exceedingly rare affection among negroes on the plant tions. Many of these planters had no recollection of seeing plantation slave affected with the disease, and it was even s dom seen in those who visited in the towns and cities wh they were more exposed to the infection. The negro engage in the cultivation of rice is employed for a large part of h time during the winter months in repairing the dykes an cleaning and digging ditches, and the consequent exposure i the performance of this work often gives rise to the acute form of pneumonia and bronchitis. Yet they were singularly exemp from consumption. The slave represented so much investe capital, and was warmly clad, well fed, comfortably housed and when sick had the best medical attention. Consequent the mortality among them did not exceed that of white me The death-rate in Charleston in 1860, of the negro, was exactl that of the white man, 12 per 1000. In 1895 it was 29.10 col ored, 18.70 white, per 1000. A comparison of the phthis death-rate in the city of Charleston among whites and colored in decimal periods from 1865 to 1895 inclusive, reveals some startling facts. The deaths from consumption, in the perio from 1865 to 1895, were as follows: In 1865, whites, 26; col ored, 74; in 1875, whites, 54; colored, 132; in 1885, whites, 5 colored, 209; in 1895, whites, 39; colored, 194. Total death in 31 years—whites, 1525; colored, 4975. Estimated popula tion in 1895: whites, 28,870; colored, 36,295. The police regu lations in force on most plantations did not permit the slave to visit adjoining places without a permit, and they usually retired early at night and arose at an early hour next morning As soon as emancipation occurred, there was an exodus of the negroes from the rural districts to the small towns and cities where they congregated in large numbers, and there was over crowding in every place that could afford the least shelter And even now, on farms remote from the towns, they evince the same tendency of overcrowding their little cabins with more people than they can possibly accommodate with comfort or safety. There is no disease which claims as many victims among the negroes as consumption. And the prime cause of this excessive mortality is room-density, too many living in the same room.—*Bulletin of the Ohio State Board of Health*, June.

NECROLOGY.

THOMAS SEXTON ROBERTSON, M.D., University of Vermont, 1879, of New York City, died at his home September 7, aged 44 years. Born in Glasgow, Scotland, he took a medical course in London, and after graduation in this country, began practice in New York as a specialist in nervous and mental diseases.

W. S. MCNAIRY, M.D., a graduate of medicine of the Uni versity of Pennsylvania, died in his 82d year in Washington, D. C., September 3. He was forty-six years a government clerk in the U. S. Naval Department, and continued at his desk until within a week of his death.

JOHN L. NEILSON, M.D., Medical College of Ohio, 1866, died suddenly in Boston, Mass., September 1, in his 54th year. He

served twenty-nine years in the Medical Corps of the U. S. Navy, was a member of its examining board and at the time of death was a medical inspector at the Charleston navy yard.

Major GEORGE MCCREARY, surgeon, United States Army, who died August 23 on the *Catania* en route from Santiago to Camp Wikoff, from dysentery, following yellow fever, and who was buried at sea, was a native of New York. He entered the army as an assistant surgeon, with the rank of captain, on Feb. 17, 1880. He reached the grade of surgeon with the rank of major last year and accompanied the army to Santiago de Cuba, where he rendered excellent service until he was stricken down with the disease which resulted in his death.

LEVI J. RICE, M.D., of Hillsdale, Mich., August 31, aged 64.——Fred A. Harpold, M.D., of Lower Salem, Ohio, August 31.——L. K. Garfield, M.D., of Algona, Iowa, September 2, aged 78.——Franklin Burr, M.D., formerly of Buffalo, at Greeley, Colo., September 1.——C. J. Covey, M.D., of Grand Ledge, Mich., September 1, aged 73.——W. V. Camp, M.D., of Hoxie, Ark., August 30.——C. B. Carneth, M.D., of West Superior, Wis., September 2.——A. J. Coward, M.D., of Clinton, Tenn., September 7.——Robert Jordan, M.D., of Jordan Springs, Va. September 4, aged 75.

MISCELLANY.

Habitual Luxation of Lower Radio-Ulnar Articulation.—This produces much functional disturbance, which is often ascribed to every cause but the right one. Hoffa has treated three cases by fastening the two bones together with three deep sutures embracing the periosteum of each, thus affording a firm support to the head of the ulna. The functional results were perfect in less than three weeks.—*Cbl. f. Chir.*, July 2.

The Zambaco Prize.—Zambaco Pasha of Constantinople has endowed the French Société de Derm. et de Syph., with funds for a biennial prize of 900 francs, to be awarded first in 1900, for the best article in French on the Contagiousness of Syphilis at All Stages of the Disease. Communications must be sent in to the secretary, Dr. Hallopeau, Boulevard Malesherbes, 91, Paris, France, before November 30, 1899.

Nude Out-of-door Life in Therapeutics.—An editorial in the *Gazette Méd. de Paris* of August 13, describes a sanitarium at Veldes in Austria, in which the patients—mostly neurotic subjects—live in shelters open to the air and discard all clothing except a pair of bathing trunks and a straw hat. They dine and lounge on rugs spread on the green sward, after games and exercises that recall the South Sea Islanders. A physician is connected with the establishment, appointed by the Austrian Government, and no undue license is allowed. The sexes are treated in separate quarters. This retreat is reached from Innsprück in the Tyrol, via Toblach and Villach in the Oberkrain.

Paresthetic Meralgia.—The *Revista Méd. de Chile* for February, contains the observation of three cases that confirm Roth's recent description of this affection. After walking or fatiguing the legs even slightly, the external muscles are the seat of strange sensations of heat and cold, amounting to actual pain. Hairless patches are also to be distinguished in the region, with normal sensibility, "smooth as parchment." (Roth.) No benefit was derived from any treatment. According to Roth's experience diabetes or tabes invariably followed in the course of a few years. In the new cases there were diabetic or neurasthenic family antecedents and one case had an inextinguishable thirst that suggested diabetes.

Direct Bronchoscopy.—Prof. G. Killian of Freiburg announced at the recent South German Congress of Larynology, that he has succeeded in visually inspecting the bronchi below the bifurcation. The bronchi, he finds, are much more flexible than usually supposed. After cocain anesthesia, he introduces a stiff tube into the bronchus, which straightens it until he can inspect it with the eye and examine even into the branches. The subject does not find the experience particularly disagreeable. He sits erect, the head thrown back and to the left, while he breathes easily through the tube, the observer standing on the right. Killian has tested it until he has established its entire harmlessness. For a man he uses a tube 9 m.m. in diameter. Once past the throat, the tube slides down by its own weight.—*Munich Med. Woch.*, July 5.

Electric Treatment of Epithelial Cancers.— Fabre-Domergue asserts that the orientation of the epithelial elements determines the character of the tissue; with a centrifugal orientation the elements develop with a continuous exfoliation of the horny layer and renewing of the rete mucosum, without any tendency to break through the basement membrane, while centripetal orientation is abnormal and leads to partial or total infiltration of the tissues below the basement membrane. He suggests that we utilize the property possessed by the electric current of turning certain unicellular organisms until their long axes parallel the direction of the current. Galeotti has also recently established that cellular division in the epidermic elements of the salamander is affected by the electric current. "It may be possible to restore the disorganized cells of epithelial cancers to their normal centrifugal orientation and arrest the growth of the neoplasm."—*Bull. de l'Acad. de Méd.*, June 28.

In Honor of Berzelius, the Swedish Savant.—A great memorial fête will be held in Stockholm, October 7 next, on the occasion of the fiftieth anniversary of the death of the savant Berzélius. Every scientific society in Europe will be represented, it is expected. In 1819 Berzélius was the guest of the City of Paris. He was an intimate of Laplace, Bertholet, Gay-Lussac, Ampère, Arago, whom he visited in Arcueil when every Sunday they met and sat under the trees and discussed the scientific questions of the day. Three years later Berzélius was made a member of the Institut de France, but he found the ceremonious display there less amusing than the little gatherings at Arcueil, and he was seldom seen at the Institut. Berzélius, who was born in East Gothland, Sweden, in 1779, studied chemistry and medicine at the University of Upsal. His most important work is "Lärebok i Kemien" ("System of Chemistry"), in three volumes, which has been translated into every European language. He was Professor of Medicine and Pharmacy at Stockholm from 1807 till 1832.—*N. Y. Times.*

Bones can be Introduced for Inspection of Experts.—In a malpractice case where negligence was charged in the treatment of a broken leg, causing gangrene to set in, and requiring an amputation of the leg, the court of appeals of Kentucky holds, Williams vs. Nally, that it was not improper to allow the bones of the fractured leg to be introduced for the inspection of the experts. It also maintains that the testimony of those not professing to be experts with respect to the actual condition of the leg was competent, because they spoke only of what they saw and knew, expressing no opinions. Nor does it think that it was improper to allow counsel for the plaintiff to incorporate into some of his questions quotations from medical works, as part of his questions, when catechising experts as to their technical knowledge. Finding no reversible error, it affirms a judgment for $750, against the physician, who, by the way, was sent by a justice of the peace to attend the case, under instructions to give his patient all necessary attention, but not to run the county to unnecessary expense.

Estate Liable for Support of Lunatic.—The supreme court of Tennessee says, in the case of McNairy County vs. McCoin, an action brought to recover payment for the board and maintenance of a lunatic admitted to a county asylum for the poor,

that the duty imposed by the common law upon the guardian to maintain and support his ward is no less obligatory than that imposed upon the husband to support his wife; and if the guardian, with means of the ward at his disposal, breaches his duty, and permits his ward to become a charge upon the county, it should be reimbursed for expenses incurred in supplying necessaries to said ward. It is true, the county asylum established under the laws of Tennessee is a charitable institution. Still, it was designed for the care and maintenance of indigent paupers, and not for the benefit of those who have means sufficient to support themselves. If, therefore, it appears that the county, through the neglect of the guardian, has been compelled to provide for one who was not a pauper, it would seem but just that the county should be indemnified out of the funds belonging to the ward, as the court holds; and to this effect, it says, is the great weight of authority, a contrary view of the supreme court of Indiana being pronounced out of line with the current of authority, and but the decision of a divided court.

The Neuron Theory Tottering.—Franz Nissl publishes in the *Munich Med. Woch.* of August 2, 9 and 16, an account of his recent investigations in regard to the nerve-cell and gray matter. He has established a number of important facts which undermine the neuron theory and demonstrate that the nerve tissue consists of nerve cells and a specific nervous substance, (the gray matter), a fibrillary substance, originating in the nerve-cell protoplasm. It evidently represents the highest stage of differentiation in the animal organism and is an especial functional factor in the mechanism of the nervous system, the functionating element, while the nerve cell is the forming and nutrient element from which the other is developed. It is interesting to note in his cuts how this functionating element predominates in man—the higher the development of the mammal, the less nerve cells there are in corresponding perpendicular sections of the cortex. . . . Among the facts on which he bases these assertions are the discoveries of Apáthy and Bethe of a co-ordinated reflex in an invertebrate (carcinus mænos), without any central nerve cell, also that this reflex rapidly subsides, having no continuing power. Further, his and others' demonstration of fibrils in the unstainable portions of the cell body show that these primary fibrils undoubtedly constitute the conducting element. Another fact is the classic lack of proportion between the alterations in the nerve cell after intoxication or other injury and the functional disturbances; the cell may return to a perfectly normal condition, while the function is still lost. . . . His own research has been principally in the line of the effect of various poisons on the nerve cell. He finds that each poison affects the nerve cell of the cortex in a special, almost a specific, manner (except in case of very slow, gradual intoxication), and that the alterations produced are chemic or physical or both, and are primarily merely the expression of the disturbances produced by the toxin or other injury in the material equilibrium of the nerve cell.

Heart Disease from the Standpoint of Life Insurance.—Dr. Robert H. Babcock, *Medicine* Vol. iv, p. 177, *American Medico-Surgical Bulletin*, in discussing the attitude of the companies toward their examiners as one of distrust regarding the liability of reports accurate enough for a basis of expectancy, says that tachycardia of 90 or 100 is often due to the perturbation of an examination, the use of tea, coffee or tobacco, and mayhap the naturalness of some individuals. A cardiac murmur is the least important; its intensity is no criterion of its gravity; on the other hand, a dangerous lesion may declare no murmur at all. Robust men of large frame, ample chests, eaters of meat thrice daily, who take comparatively little out-door exercise, with the handicap of active mentality or great responsibilities, are the risks which die unexpectedly in the fifties or early sixties. An examination of the heart in these cases may reveal an absolute dullness usually normal, while deep percussion may prove an increase of relative dullness sufficient to constitute cardiac enlargement. Dwelling upon some of the conditions which should determine one's opinion of the likelihood of an applicant with a compensated mitral insufficiency or aortic stenosis living out his expectancy, the writer regards the tendency to recurring attacks of articular rheumatism, or of gonorrhea, or some other infectious disease present, and liable to set up fresh endocarditis as of unfavorable prognosis. Age also influences the prognosis, as if the person be beyond middle age it is probably of sclerotic origin and progressive. The occupation is of utmost importance, since, if it subject the individual to vicissitudes of weather, or to cardiac strain from undue exercise or physical tax, compensation is not likely to be long maintained.

Obscure Sources of Poisoning.—Dr. Clement Dukes, physician to Rugby School, refers to two cases of the above nature. The first of these was an adult male having the symptoms of plumbism. The patient was a gardener, and the physician minutely searched every possible source of poisoning in his house without discovering the cause. Failing in this, inquiry was made into his habits from rising to retiring, and the cause was traced to this: he breakfasted early, went to work, and between 8 and 9 A.M. visited a certain ale-house to have a glass of beer, where he was usually the first customer. As the beer was drawn by the beer pump from the barrel in the cellar through a lead pipe he evidently imbibed with his, often probably hard, beer his daily dose of lead. This visit was at once given up, he recovered from his poisoning, which has never recurred, and he now allows some one else to have the first glass. A few weeks ago a young woman, who evidently had something on her mind and was suffering considerably, which apparently arose from morphism, called to consult Dr. Dukes. After considerable patient inquiry the following facts were elicited: Some years since she had suffered from a painful rectal trouble for which morphia suppositories had been prescribed, which not only relieved her local pain but doubtless produced other general peaceful effects. Feeling very wretched from too long a ride on her bicycle, which made her quite ill, she remembered her suppositories and resumed them, using several daily for a considerable time, with the result I have stated.—London *Lancet*, April 2.

County has no Right to Discharge Physician Without Cause. The first of several questions deemed important enough to be specially certified up to the supreme court of Texas, in the case of Galveston County vs. Ducie, was as to whether the commissioners' court had authority to appoint a county physician, at a stated salary, to perform duties comprising the giving of medical attention to the prisoners at the jail, both the criminals and the pauper insane and county paupers at the poor farm and any one sick within the jurisdiction of the county, confined as a prisoner, pauper, or lunatic, and to attend inquests whenever anybody was found dead. The answer of the supreme court, handed down May 9, 1898, is that the commissioners' court of Galveston county was authorized to make the contract for medical services to be rendered to paupers and prisoners for whose care and support the county was required to provide, but that it had no authority to make the contract for the physician's services at inquests, and that to that extent the contract made was not binding upon the county. The explanation of this is that counties are not liable for the services of medical men at inquests which may be held under the provisions of the Texas Code of Criminal Procedure. Yet, as already suggested, the court holds that, although the stipulation in the contract for the physician's services at inquests was ultra vires, or beyond the power of the commissioners' court to contract, it did not render the agreement invalid for that part which the county had the power to con-

for. And it insists that, so far as the commissioners' had authority to make the contract referred to, the ty was bound to the same extent an individual would have n, and it had no right to discharge the physician without se. If wrongfully discharged, he would be entitled to over the amount contracted to be paid him, less so much as tendance upon all inquests in the county would be reasonly worth, and less any additional sum the evidence might w that he could make in the practice of his profession by g relieved of attending to the county cases. But the con- t in question, not contemplating that the services to be dered for the county would occupy all of the physician's e, but that he might give what spare time he had to private ctice, the court holds that, when wrongfully discharged he ould not be obliged to seek other employment, to reduce the mages against the county, because that would not be con- tent with his regular business, some weight also being tached to the fact that it did not appear that there was any her business of like character in which he could have tained employment.

Practice of Medicine by Clergymen.—The *Lancet* states that the oman Catholic bishop of Augsburg has recently made a com- unication to the clergymen of his diocese on the subject of e increasing tendency of the clergy to give advice in cases quiring medical treatment, a practice which he condemns as ing at variance with the ordinances of the church, and he harges his clergy to avoid anything which may have the ppearance of interfering with the work of the medical pro- ssion. This order is the more remarkable because Woeris- offen, where the late Father Kneipp lived and his successors till continue his work, is in this diocese. The expression of milar views by other clerical dignitaries would no doubt ve a beneficial influence as tending to prevent misunder- tandings between the two professions. That quackery has its ost fervent adherents among the upper classes was clearly own by a recent occurrence. One of the leading newspapers Berlin published a letter written by a medical man showing at a so-called "magnetopath" had pretended to cure patients y means of magnetic fluid coming from a well-known Berlin edium now resident in America. This medium had formerly aused a certain amount of sensation in connection with spirit- alist meetings, but eventually left the city when it was shown y some medical men that she had been carrying on a system imposture. A few days after the insertion of this letter a ublic declaration appeared in the advertising columns of the eading Berlin journals, signed by a great number of patients the quack. The signatures were for the most part those of embers of the nobility and of the upper classes, who solemnly tated that they had been cured by this man after having been ttended without success by legally qualified medical practi- ioners. The great popularity of every kind of quack treat- ent among the upper classes leaves little ground for hope hat unqualified practice will be made illegal.

Leprosy in Hawaii.—A pamphlet on this subject has been ublished by Dr. Ashburton Thompson. He quite fully con- iders the question of imported labor from leprosy areas, but finds little evidence in support of the theory that the disease was introduced in that way. The first reliable observations on the occurrence of leprosy in Hawaii were made between 1855 and 1863, but the rate of its diffusion is very uncertain. Dr. Thompson remarks: "All competent witnesses hold the following opinion—that there is no record or distinct tradition of the invasion of the disease. When attention was first attracted to it cases existed in every island of the group; it is not known or suggested either that any island was attacked before the rest, or that any remained free after the rest were known to suffer." It is thought at the present date by those at Honolulu, who are in the best position to judge, that the outbreak is now declining. The evidence that this is so is not as yet such as can be easily apprehended by the foreign visitor, and it is the case that during the last thirty years a similar opinion has been expressed, from time to time, only to be contradicted a little later by acknowledged facts. Great difficulties have been experienced in carrying out a policy of isolation. In 1865 the necessary land was acquired, which thenceforward become known as the Settlement, but for many years constant communication was carried on between the lepers and their friends on the other islands. Consequently, the author says, no account of the fluctuations of this endemic can be written; all that can be furnished is a statement of the number of persons annually removed to the Settlement, and this is given for the term of years from 1866 to 1895, in a table. But these numbers stand in no known relation to the total affected in the whole group, and fluctuate largely, if not exclusively, in correspondence with terms of greater or less executive energy, and are hence of little scientific value. In fact, as Dr. Thompson himself observes, the value to etiology of the present case must be classed scientifically as "unobserved," as no records were kept of the original inhabitants of the islands who became lepers, but the vast majority of cases were observed in those families whose ancestors had been imported into the islands.

An Emergency Call Requited by Prosecution and Fine.—Dr. Leichtentritt, a practitioner of Berlin, has had a very disagreeable personal experience, the details of which he has published in the *Aerztliche Sachverstandigen-Zeitung* for the benefit of his professional brethren. Dr. Leichtentritt when on his way home and near his residence, one evening, was asked by a policeman to see a woman who was giving birth to a child, in a water-closet. He did so, and found that the woman had just been delivered of a girl, the placenta being still in the uterus. A crowd of women was present to watch the proceedings and to give advice to the patient. The surroundings not being the most suitable for obstetric manipulations, Dr. Leichtentritt only tied the umbilical cord and ordered that the woman, whose name and address he did not ask for, should be conveyed by the policeman to the nearest hospital for the removal of the placenta. He then went away, feeling inwardly content with the charitable act which he had performed under such strange conditions. Some weeks afterward the woman called on him to ask whether he had notified the birth of the child to the registrar. She told him that she wished the child to be baptized, and according to law it was necessary for the clergymen to see the certificate of the registration of birth. Dr. Leichtentritt said that he had not notified the birth and explained to the woman that it was the duty of the hospital officials to do so. Not long afterward he was officially summoned before the registrar, who drew up a long report of the case, and his troubles were supposed to be at an end, but to his great disappointment he received an order from the magistrate to pay a fine for infringement of the registration laws. Dr. Leichtentritt refused to pay, not feeling that he had committed any offence, and rightly believing that he did not deserve to be fined for help freely given to a poor woman. Legal proceedings were taken against him, but judgment was given in his favor on the singular ground that he had not been "present" at the delivery, as the child was already born when he arrived on the scene. The law is to the effect that medical men or midwives or other people "present" at the birth of a child are bound to notify the birth to the registrar, but it was not applicable to the present case. In future Dr. Leichtentritt and some other medical men will probably be less ready to respond to appeals for their assistance.

The Profession and the Interviewer.—The *Scalpel* reprobates the action of certain practitioners in supplying the press with bulletins and interviews regarding the sicknesses of the great,

and as an example instances the fact that day by day the press described the progress of Mr. Gladstone's illness; day by day with ghoul-like eagerness the press detailed the varying phases of his malady; and Mr. Gladstone literally was killed by inches. What useful purpose could be served by such details?—save the selling of a few extra copies, and the making of a few extra half-pennies. Still worse, in our opinion, are the reported interviews as to the exact nature and progress of the patient's illness; how he consulted Dr. So-and-So, how he actually saw Dr. Carter of Liverpool, how he then went under care of Dr. Blank and Dr. Blank. If such interviews and such actions are sanctioned in high places, why should not Dr. Minimus give the reporter details of the illness of the local great man and advertise himself. There is only a difference in degree. In each locality the big man of the place is as important to the place as Gladstone was to the larger circle. Bulletins are, however, condemned in the case of the smaller man. But the question resolves itself into a small compass. It is not a question of the high or low position of the patient. The medical attendant is consulted in a confidential capacity, he has no right to let the public into his confidence. He should say to all reporters and interviews—"I have told the relatives my opinion of the case, if you want any information you must go to the relatives. I can not enter into details which I obtained in my professional capacity." We have seen in some of our illustrated journals ghastly pictures of the death chamber of Mr. Gladstone. The Ex-Premier is almost at his end, his wife holds his hand and his family are round his bed. This picture has no merit from an artistic point of view, and it certainly appears to us to be in the worst possible taste. The inner life of our great men may sometimes be legitimately peered into, but certainly their death chambers should not be invaded—a veil should be hung over this last solemn act. We trust that the College of Surgeons and Physicans or some other official body will in some way express an opinion in general terms upon the proper attitude of medical men when attending distinguished patients.

Prior Removal of Ovaries Ground for Annulling Marriage.—The exceedingly novel and important question was raised in the case of Wendel vs. Wendel, whether the husband is entitled to the annulment of a marriage contracted without knowledge on his part that his wife was physically incapable of conception as the result of a surgical operation, such as the removal of her ovaries, known to her, but concealed from him. Section 1743 of the New York code of civil procedure provides that an action may be maintained to procure a judgment declaring a marriage contract void, and annulling the marriage, among other causes existing at the time of marriage, where one of the parties was physically incapable of entering into the marriage state. In deciding the question presented, under this provision, Mr. Justice Hirschberg of the special term of the supreme court of New York, Kings County, follows, in part, this line of reasoning: Was the defendant wife, at the time of the marriage, physically incapable of entering into the marriage state, within the meaning of this statute? The answer depends in great measure upon what are recognized by law as the objects and purposes of marriage. If sexual intercourse alone is so recognized, then it must be conceded that the defendant in this case was physically capable. But the creation of a family is also regarded as one of the chief purposes of a matrimonial union, and it is difficult to see how an individual can be physically capable of performing the contract who has lost the organs essential to conception. The question is different from that presented by sterility or barrenness. It is well settled that a marriage will not be annulled for the mere barrenness of the wife. Not only is such a condition and its continuance difficult, if not impossible, to prove, but its existence, if established, may not be innate, but only peculiar to an inharmonious combination. In such cases, whether the power to conceive or to impregnate be at issue, the question of the condition and its permanence rests on hypothesis and speculation, and is practically beyond the pale of judicial scrutiny. Impotence in such cases is the sole and settled ground of nullity. Continuing, the judge says that it seems to him that the question is vitally distinct where the barrenness is absolute; is not a constitutional quality or a functional failure, but a physical incapacity, resulting from congenital malformation or the total loss of the organs of conception by disease or the surgeon's knife. So he holds, December, 1897, that a person destitute of child-bearing organs is physically incapable of the chief and higher purpose of matrimony, and consequently of entering the marriage state. And it follows, he holds, that in concealing from the husband the fact and extent of her misfortune, the defendant in this case procured his consent to marry her by fraud, which constituted a good ground for divorce. But had the plaintiff married her with knowledge that the surgical operation performed on her involved the removal of her ovaries he would, of course, be estopped from action because of her physical condition. The fact that in this case the prospective husband had asked whether she was physically and mentally capable of being a wife, and that the judge says that good faith required that she should have then disclosed the fact that the surgical operation involved the removal of the ovaries, perhaps casts some doubt on whether the judge would have decided as to the fraud and divorce therefor as he did, though his reasoning set forth would seem to have required it, had not the inquiry been made of her.

San Francisco.

Now that the war is so nearly over, and that the proper thing to do is to seek for "who is to blame," it would perhaps not be be amiss if some inquiry were set on foot in the effort to establish the blame for the many instances of alleged mismanagement in the camps in and about San Francisco. When the volunteer regiments gathered at this point a few of the companies were camped at the Government Post called the Presidio; but afterward most of these and all subsequent arrivals were encamped on the other side of the city, in some sand lots which have heretofore been given up to the trade wind and the fog. Of sewer facilities there were none, and of water there was a very meager supply in this new location, called Camp Merritt. On account of the cold winds and the heavy fogs almost constantly prevailing, that section of the city had been but little built up. Here the men were camped and here they built their privies, just about fifty feet from the camp kitchens; at the end of a month the stench from the combination of kitchen and privy was painfully evident to passengers on the cars which pass that side of the camp and perhaps a hundred feet from the camp limits. Who permitted the locating of the privies so near to the camp kitchens? And who, indeed, was responsible for locating the camp in these wind-swept and foggy sand lots, where water is scarce and sewers there are none? Who supplied musty straw for the bedding, with the result that there was an epidemic of otitis media from micro-organisms infecting the straw, which resulted in several deaths from mastoid disease and meningitis? Who is responsible for supplying the zoölogic collections called bacon, which sometimes have been issued to them for rations? These and a few more questions might well be asked, in view of the very high death rate and the large sick list. It was rumored that the Southern Pacific, which corporation controls all the street-car lines running out to Camp Merrit, was largely instrumental in having the camp located in the sand lots, for it has no car lines running to the Presidio, and its rivals have no lines giving service in the vicinity of Camp Merrit. This rumor was denied, but that is but what one could expect, and in view of the weight which political pull and corporation influence seems to have, the denial means nothing. At present there are about three hundred and fifty men on the sick list among the troops which were recently removed to the Presidio from Camp Merrit, and the death rate is not what one could conscientiously call small. When investigations are being urged with greater emphasis from day to day, why not look into some of these things which, in view of the results, may be called outrageous blunders?

IT IS STATED, on good authority that the joint committee of

The Board of Regents and the Faculty of the Medical Department of the University of the State of California have in contemplation a plan for making the medical department one of the leading medical schools of the country. They have entered into correspondence with Johns Hopkins, to ascertain the data of the plan of operating that famous school, and the necessary expense of conducting a school on very similar lines. Certainly the plans as outlined by a member of the joint committee will, if carried out, put the medical department of the university in a place second to none in this country. A medical library that will be a library in the fullest sense of the word, is already decided upon and will have been commenced by the time the new buildings are in use. Through the instrumentality of Dr. Philip King Brown and the generosity of the widow of the late Dr. Richard John Hall, almost the entire library collected by Dr. Hall is to be given to the university for the use of and to be placed in the building of the medical department. This library includes a large number of complete files of medical journals, American, English, French and German, and is of considerable value. Other notable accessions are in view and it is to be anticipated that before the first of the coming year there will be at least five thousand volumes in the library. A large and excellently adapted room has been set aside for this purpose and the shelving is now being made.

Philadelphia.

Six Hundred Soldiers lie ill in the hospitals of Philadelphia. And yet this large number of sick represent but a proportion of the total number now being treated elsewhere.

Philadelphia Mortality Report.—The number of deaths for the week ending at noon, September 10, was 537, an increase of 124 over the previous week, and of 148 over the corresponding period of last year. Of the total number 172 were in children under the age of 5 years, cholera infantum being very prevalent owing to the excessive heat. The principal causes of death were: Apoplexy 18, dysentery 5, cancer 16, diarrhea 3, inanition 10, cholera infantum 50, marasmus 25, consumption 57, old age 25, heart disease 41, suicide 8, uremia 15. Infectious diseases: Diphtheria 64 cases, 10 deaths; scarlet fever 12 cases, 1 death; typhoid fever 222 cases, 28 deaths. Total 298 cases, 39 deaths, a decrease of 47 cases and 14 deaths from preceding week.

September Has Been Hot in Philadelphia.—Physicians who have remained in the city during the summer will not forget the past few months for years to come. While the weather man stated some time ago that it had been the hottest for thirty years, it was a source of much pleasure to feel that the hottest was over after the first of September had been passed. But on the 5th inst. a temperature of 91 was reached with the humidity at 83 per cent. ending in 6 deaths and 20 prostrations. On the 6th there were 6 deaths and 18 prostrations. On the 7th 4 deaths occurred. Since August 31 there have been 41 deaths attributed to the intense heat.

Quarantine Station in Philadelphia Can Be Quickly Established.—Owing to yellow fever scare now prevalent along the Gulf States the State Quarantine Board of Pennsylvania has become quite active of late and is preparing itself for emergencies which may arise. It was recently announced by Dr. Henry C. Boenning that complete arrangements had been made by the Board of Quarantine whereby the station at Marcus Hook could be provisioned and equipped for 200 persons, within six hours if the emergency arose. The Hon. John Wanamaker offered to equip the station with bedding, tableware, etc., also cooking ranges. Prompt delivery of 100 to 1000 pounds of meat has also been provided for.

Contributions for Relief of Sick Soldiers.—Mr. George C. Thomas, treasurer of the National Relief Commission, acknowledges the following contributions received at the banking house of Drexel & Co., Philadelphia: Cash previously acknowledged, $56,178.56; amount cash to date, $621.16; total, $56,799.66. The St. Agnes Hospital acknowledges receipt of $1048, and the Medico-Chirurgical Hospital $3580.50 for the relief of the sick soldiers. Contributions have also been received by all of the hospitals of the city.

Hospital Trains Sent Out from Philadelphia.—The following number of hospital trains have been sent to the different army camps by the various hospitals of this city: University of Pennsylvania, five; Medico-Chirurgical Hospital, five; St. Agnes Hospital, one; St. Joseph's Hospital, one. The German Hospital is in communication at the present time with the Surgeon-General in regard to dispatching a train for a similar purpose. Of the soldiers brought home, about eight deaths have occurred from typhoid fever. Dysentery, diarrhea and malarial fever account for the illness of a large proportion of the troops, many of whom have been discharged cured.

Avoiding Vaccination in Philadelphia.—Dr. Ott of the 29th sectional school board questions the genuineness of many vaccination certificates filed at the district school by pupils attending. Believing that many papers were irregular, Dr. Ott visited the school to make an examination of the scars upon the children, but in many instances refusal was encountered on the ground that the parents objected. A resolution, however, was passed by the board that the principals of the schools be instructed to make the examination, and also to compare the certificate with that of an accepted medical register.

Personal Mention.—Dr. Ernest Sangree, formerly pathologist to the Philadelphia Hospital, but late professor of pathology and bacteriology in the Vanderbilt University, has returned from a trip to Europe via Philadelphia.

Bequest to Charity.—By the will of the late Harriet B. Evans of this city, a bequest of $5000 has been made to the Presbyterian Hospital as an endowment for a bed in memory of her husband.

Washington.

Health of the District.—The report of Health Officer Woodward for the week ending September 3, shows the total number of deaths to have been 109, of which 58 were white and 51 colored. Among the principal causes of death are noted, circulatory, 11; intestinal, 7; genito-urinary, 3; respiratory, 9. There were 25 fatal cases of the zymotic class, 7 of which were from inflammation of the bowels, 2 from diphtheria and 8 from typhoid; 3 of the latter cases were soldiers in the Army Barracks. There were 43 cases of diphtheria and 39 cases of scarlet fever under treatment at the close of the week.

Drs. Albert R. Collins and F. F. Repetti have been appointed physicians to the poor.

Woman's Clinic.—The regular monthly meeting of the Board of Directors of the Woman's Clinic was held on the 3rd instant at the hospital; important business was transacted and the hospital shown to be in a flourishing condition.

Associated Charities.—The regular monthly report of the Board of Associated Charities shows a marked diminution in the number of applications for help and medical treatment. The number of applications for free treatment made to the Central Dispensary and Emergency Hospital was 147; of this number 109 were granted, 26 were refused and 12 were found to have given false addresses. The hospital authorities are very much pleased by the fact that certificates were granted to only 74 per cent. of applicants, thus relieving the hospital from the care of about 26 per cent. of applicants who would have otherwise imposed upon the institution. Ten applicants for treatment at the Woman's Clinic were investigated, 3 of whom were rejected.

No More Nurses Required.—The following communication was sent to the D. A. R. Corps by General Sternberg:

Dr. Anita Newcome McGee, director D. A. R. Hospital Corps,
Dear Madam:—I desire to express to you and to the members of your committee my high appreciation of the valuable assist-

ance rendered me in the selection of trained female nurses for duty at our general and field hospitals. The results have been entirely satisfactory, and I have received most favorable reports with reference to the value of the services of the trained nurses selected through you. The demand for nurses is probably about over, and in my opinion you could now discontinue your labors in this direction without injury to the service. I will therefore make other arrangements for the selection of female nurses, if more should be required, in order that you may be relieved from the arduous labors which have occupied your time so completely during the past four months. I desire to express my sincere thanks to you and to each member of your committee, for your patriotic and unremitting efforts, and for your valuable assistance in enabling me to provide for the care of our sick soldiers. Very truly yours,

GEORGE M. STERNBERG, Surgeon General U.S.A.

DISTRICT SURGEONS RETURN.—Surgeon and Major R. A. Pyles, and Assistant-Surgeon J. H. Cox returned to Washington today with the District of Columbia Regiment from Camp Wikoff. Both surgeons show the effect of hardship and overwork, but have stuck to their regiment faithfully ever since they left Washington. They were warmly welcomed in parade by thousands of friends and admirers. Assistant-Surgeon Weaver returned some time ago, but has been very ill and confined to bed. At one time grave doubts were entertained for his recovery.

Detroit.

WAANE COUNTY MEDICAL SOCIETY.—The regular meeting of this Society was held on Thursday evening, September 8. Dr. David Inglis read a paper on "Dietetic Points." The essayist's first point was what he called the very common and very dangerous fallacy that fruits should be eaten for breakfast. He regarded the habit, in city life, of eating fruit for breakfast as pernicious, for the reason that the person who indulges the appetite with such diet is just getting steam for the day's work, his digestive power is at the lowest ebb and the food is of a highly indigestible nature, and must be digested while all of the person's energies are devoted to business and as little as possible to digestion; besides, one who fills his stomach with raw fruit has taken in very little really nourishing food and consequently his body goes hungry. The second point in the Doctor's paper was, fruits and vegetables should be cooked before eating as they are more readily digested. He said: "In plain terms, it takes an admirable digestion to digest uncooked food and the man or woman who has not a fine reserve of digestive power brings on indigestion by the use of uncooked food. Oddly enough, the moment a patient has a bad vomiting spell or an attack of cholera morbus, he searches as probable cause for some raw food or other, but at all other times he quotes medical authorities to prove that it is so very wholesome to eat lots of raw fruit." His next point was regarding the drinking of water. He said: "Our city men and women, or many of them, go along with barely enough water to keep from drying up. Then they become addicted to pills, tonics, massage, electricity and Christian science—dying for water while the hose is playing in front lawn. . . . Our patients need to be ordered to drink systematically, not what they want but what they need." The Doctor next took up the point of feeding typhoid fever patients with milk. He condemned the practice in very strong terms, because milk is a solid and not a liquid food; it is a fine culture medium for many bacilli and especially the bacillus typhi abdominalis. Pure water, he said, should be given instead of milk.

HEALTH REPORT for the week ending September 10: Deaths, 112; births, male 40, female 35; contagious diseases, diphtheria 1, scarlet fever 18.

Societies.

A regular meeting of the Polk County (Iowa) Medical Society was held in Des Moines September 6. Papers were read by E. E. Dorr, J. W. Cokenower and James T. Priestley.——A regular meeting of the Lucas County Medical Society was held September 2.——The quarterly meeting of the Rhode Island Medical Society was held in Providence September 1.——The McLean County (Ill.) Medical Society held a regular meeting in Bloomington September 1.——The St. Clair County (Mo.) Medical Society held a regular meeting in St. Louis September 1.——The Belmont County (W. Va.) Medical Society held quarterly meeting in Wheeling August 31.——The semi-annu meeting of the Middlesex County (Conn.) Medical Society w held in Hartford September 7.——A regular meeting of th Lyon County (Kan.) Medical Society was held in Empori Kan., September 7.——The regular meeting of the Hornell ville (N. Y.) Medical and Surgical Association was held Se tember 6.

THE PUBLIC SERVICE.

Major Charles M. Gandy, brigade surgeon, will proceed t Huntsville, Ala., and report to the commanding General, Fourt Army Corps, for assignment to duty.

Passed Assistant-Surgeon D. L. Parker, U. S. N., is honor ably discharged, from August 26.

Passed Assistant Surgeon N. J. Blackwood is detached fro the *City of Peking* and ordered home.

Surgeon W. H. Rush is detached from the *City of Peking* and ordered to the naval hospital, Mare Island.

CHANGE OF ADDRESS.

Blitz, A., from Sidle Block, to Medical Block, Minneapolis, Minn.
Becker, E. C., from 1751 Milwaukee Ave. to 385 W. Diversey Ave., Chicago.
Bryan, G. J., from Syracuse to Fayetteville, N. Y.
Caspers, P., from 2107 Michigan Ave. to 53d and Cottage Grove Ave., Chicago, Ill.
Cole, F. M., from Hull to Arthur, Iowa.
Dahl, S., from 667 N. Oakley to 822 N. Western Ave., Chicago, Ill.
Dal, J. W., from 482 Milwaukee Ave. to 499 N. Robey St., Chicago, Ill.
Elgin, W. F., from Bethesda, Md. to Glenolden, Pa.
Frost, C. A., from Almond to Stevens Point, Wis.
Gordon, R. N., from Ann Arbor, Mich. to Realty Block, Everett, Wash.
Gihon, A. L., from Sykesville, Md. to 233 Fifth Ave., New York, N. Y.
Gunn, J., from 70 State St. to 5127 Cornell Ave., Chicago, Ill.
Gilbert, J. R., from Dallas to Ranger, Texas.
Husk, C. E., from Chicago, Ill. to Tepazala, Mexico.
Hupp, A. L., from West Union to Cherry Camp, W. Va.
Kadlubowski, S. L., from 343 N to 212 E. Forest Ave., Detroit, Mich.
Little, W. J., from Ann Arbor, Mich. to Madison, Nebr.
MacRae, Jno., from Central Mine, to Box 46, Calumet, Mich.
Munson, S. E., from Rochester, Ill. to Göttingen, Germany.
McCurdy, G. M., from 136 Park Ave. to 637 Madison St., Chicago, Ill.
Mott, B. F., from Sykes Block to 1 E. 17th St., Minneapolis, Minn.
McLeod, J. A., from Ironwood, Mich. to 291 Farwell Ave., Milwaukee, Wis.
Noyes, A. A., from 1910 Hawthorn St. to 423 Plymouth Ave., Minneapolis, Minn.
Petzke, E. A., from Evanston, Ill., to 139 W. Wilson St., Madison, Wis.
Rumpf, W. H., from 2006 Indiana Ave. to 4720 Kenwood Ave., Chicago, Ill.
Smith, E., from Burchard, Nebr. to Lawrence, Kansas.
Tait, Dudley, from 326 Geary to 1043 Post St., San Francisco, Cal.
Woolsey, M. H., from 404 to 1017 Sutler, San Francisco, Cal.
Whetstone, A. S., from 506 to 408 Nicolette Ave., Minneapolis, Minn.

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Robertson, J. D., Cambridge, Mass.; Robinson, S. E., West Union, Iowa; Reichart, F. Alfred & Co., New York, N. Y.; Ruhl, W. D., Fort Wayne, Ind.; Reig, J. B., Wyandotte, Mich.; Richards, G. A., Philadelphia, Pa.; Roeder, Philip, St. Louis, Mo.
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Van Devur, C., Grand Rapids, Mich.
Watts, C. W., Moberly, Mo.; Warren, W. M., Detroit, Mich.; Walker, F. E., Bigelow, Minn.; Woldert, E. A., Philadelphia, Pa.